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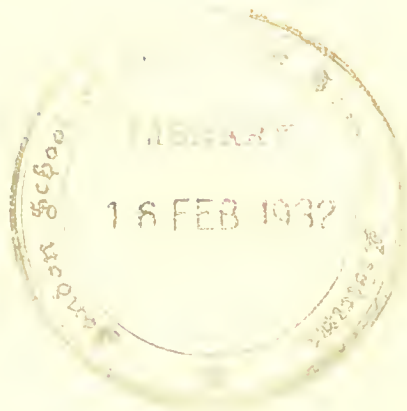
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# OUTLINES

OF THE

ANCIENT HISTORY OF MEDICINE.



OUTLINES

OF THE

ANCIENT HISTORY OF MEDICINE:

BEING A VIEW OF THE

PROGRESS OF THE HEALING ART AMONG THE EGYPTIANS,

GREEKS, ROMANS, AND ARABIANS.

BY D. M. MOIR,

SURGEON.

WILLIAM BLACKWOOD, EDINBURGH; AND

T. CADELL, LONDON.

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TO

JOHN WILSON, ESQ.

PROFESSOR OF MORAL PHILOSOPHY IN THE UNIVERSITY

OF EDINBURGH,

THE FOLLOWING PAGES ARE INSCRIBED,

AS A TESTIMONY OF HIGH RESPECT AND ADMIRATION,

BY HIS OBLIGED FRIEND

THE AUTHOR.

MUSSELBURGH,

16th April 1831.





## PREFACE.

THE purpose of the following pages is to exhibit a sketch of the more prominent features in the annals of ancient Medicine, from the belief that such a book is required, and might prove at least not unacceptable to the general, as well as the professional reader.

The Author is quite aware, that, in a mere literary point of view, he has not done himself that justice, which a more expanded way of treating his ample materials would have afforded; but he has preferred sacrificing this point, in order that, by using condensation to the utmost extent consistent with perspicuity, he might render the book a more portable manual for the practitioner and student. It would have been

much easier to have made the volume a large than a small one ; but, while convinced that a knowledge of the general outlines presented by Medical History—of the principles which guided the practice of our predecessors—must be useful to the profession, he felt also aware, that it ought not to be encumbered with unnecessary repetitions or details ; and that the object in view was only to point out discoveries, improvements, and alterations in the treatment of diseases, to discriminate between the true and false philosophy of the various schools, and to determine the claims of successive professors of the Healing Art to the attention and gratitude of posterity. This he may not have accomplished to the reader's satisfaction or his own ; but he may be allowed to put in a claim, if not for infallibility, at least for impartiality and candour.

It has almost been a matter of regret to the Author, that the nature of his subject has in a manner compelled him to cumber his pages with a seemingly pedantic display of learned autho-

rities; but he begs to be apologized for two reasons—the first of which is, that the text would have been stripped of half its utility without them; and the second, that a great part of them having been pointed out to him by Fabricius, Le Clerc, Shulzius, Casiri, Portal, Sprengel, Cabanis, and other medical historians of the Continent, the merit of the original research belongs not to him, who can be looked on in no higher light than a selector from the ample and occasionally heterogeneous materials, which they have heaped together for the illustration of their subject. In the last division of the work, dedicated to Arabian physic, he has been boundlessly indebted to the admirable History of Dr Freind—a composition which does honour to the Medical Literature of England.

To the professional reader an historical acquaintance with the healing art, and with the comparative merits of those who, in different ages and countries, have advanced it to its present state, is not a matter of mere curiosity. All who

are conversant with medical literature must be aware how often time and talents have been mis-spent, not only in the defence of deceptive theories, and erroneous modes of practice, but in the account of alleged discoveries, which have proved, in fact, to be only resuscitations of doctrines which were once supposed to be valuable, and have long ago been exploded as unimportant or useless. It is not only necessary, therefore, to be acquainted with the system which obtains for the time being, but to have at least some notion of the opinions which regulated the treatment of diseases in bypast ages; else, like the mill-horse, we may work in a circle, tread the same ground over and over again, and, without progressing, leave matters just as we found them. Without this knowledge, a practitioner, however observant, and however wide the range of his personal experience, must ever remain only half informed; for, although medicine is perhaps, beyond all other arts or sciences, essentially practical,—and books, without the bedside of the

patient, can never form the real physician,—yet the most valuable deductions are those, which are confirmed by an extensive comparison of what is seen with what is read ; and diseases can only be, at best, empirically treated, if our attention is not constantly directed to their originating causes.

The present volume takes a succinct view of the various branches of the Healing Art,—the different theories of disease, and the progress and improvements of Anatomy, Surgery, and Materia Medica from the earliest ages, till the almost total eclipse of knowledge in the twelfth century.



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## OUTLINES.



# OUTLINES.

## SECTION FIRST.

### CHAPTER I.

#### SUPPOSED ORIGIN OF MEDICINE—MYTHOLOGICAL FICTIONS.

MUCH needless speculation has been excited regarding the probable origin of Medicine; and some authors have gone the length of calling in divine interposition.<sup>(1)</sup> For this there seems little necessity; if we are allowed the position, that mankind have been the same in all ages.

Indeed we have still opportunities of judging what must have been the first rude attempt at alleviating bodily malady, from the accounts of travellers, who have recently visited tribes, yet in the first stage of

(1) *Nec Deus intersit nisi dignus vindice nodus.* The voice of antiquity, however, claimed the origin of medicine as a not unworthy opportunity. In the third book of the Tusculan Questions, Cicero confesses the general opinion,—*Deorum immortalium inventioni consecrata est Ars Medica.* Pliny makes the like declaration,—*Diis primum inventores suos assignavit Medicina, eoque dicavit.* Lib. 29. cap. 1.

civilization. Among the North American Indians, the Africans, the New Hollanders, among every congregation of human beings "from Indus to the Pole," we find traces of physic and surgery; for this simple reason, that everywhere we find diseases, and, of course, efforts towards their cure or alleviation. It matters little whether the imperfect knowledge they possess has been derived from accident or ingenuity. It is indisputable that we find it there. Disease is almost as old as man himself; and so must have been medicine. <sup>(1)</sup>

It will readily be granted, that the properties of particular substances, animal and vegetable, could not long remain undiscovered, because they must have produced particular effects on the human frame. Discoveries thus made, whether accidentally or not, would be treasured up; and new ones, from time to time, added from observation and experience. Every family and tribe must have thus had some traditional stores, which, as communication increased, would naturally merge into the common fund. Even from the inferior animals some lessons might be derived;

(1) As the early physic of all countries must be essentially alike, as dictated by the same necessity, it has not been thought necessary to follow authors more voluminously, in devoting a separate account to various tribes or nations. By the curious on these subjects, much entertainment may be gleaned from Le Clerc's "*Histoire de la Médecine*," première partie, liv. ii. c. 3., where will be found such gleanings of Jewish medicine as may be derived from Scripture; and, from Jourdan's Translation of Kurt Sprengel's work, bearing the same title, many equally interesting notices may be obtained regarding the mythological eras of medicine among the Chinese and Hindoos. (Vol. i. sect. 2.)—See also Dr Millar's *Disquisitions on the History of Medicine*. It is to be regretted that a work so admirably commenced, should have dropped with the mere traditional ages of Greece and Egypt.

hence the ancients, who loved to record facts through the medium of allegorical fable, pretend that Melampus discovered the peculiar properties of hellebore, from its effects on his goats;<sup>(1)</sup> and that Polydins, observing a serpent apply a certain herb to another of its kind, that was wounded, introduced it into practice.<sup>(2)</sup>

That Physic must have long remained in the rudest and most imperfect state, is certain; and also that it was long before any accumulation of facts taught mankind to draw general conclusions from them. Indeed, this was scarcely to be expected, as long as every man continued to be his own physician, and ideas were confined within a sphere so narrow as that which characterizes the earlier stages of civilization. Necessity, then, is the mother of art; and nothing is reckoned worthy of attention, unless immediately subservient to present comfort. Society must have made considerable progress towards refinement, ere medicine was practised by individuals devoting their attention exclusively to the art.

There is no reason, therefore, to suppose that the Art of Medicine was a divine communication; or it must have lost much of its perfectibility in being handed down to us; nor have we better grounds for crediting the assertion of Eschylus, that Prometheus stole from Jupiter that fire, which is the infuser of

(1) For the fabulous history of Melampus, see Strabo, book ix.; Apollodorus, book ii.; and Pliny, book x. chap. 49.; Herodotus, book ix. chap. 33.

(2) On the fable regarding Glaucus, son of Minos, the Cretan king, Polydus, and the serpents, *vide* Hyginus, lib. i.; et Apollodorus, lib. iii.

all arts, and, among other things, taught men the existence of medicinal substances capable of curing every disease.

In fact, the Prometheus of the poets is nothing more than a prosopopeia of the intellect and industry <sup>(1)</sup> of man—of his faculties, and their development. In this idea we are borne out by all the attributes ascribed to him; and of the same nature are the claims set up for Hermes, Mercury, or Thoth, whether regarded as the same or different persons. The same imaginative faculty, which can make Diodorus Siculus believe that Hermes was one of the counsellors of Saturn, <sup>(2)</sup> reconciles Eusebius to the idea that he was in fact no other than Moses. <sup>(3)</sup> Were such the case, his claims to the invention of physic must be set aside, as we read in the last verse of the last chapter of Genesis, that there were physicians in Egypt long before his time, the corpse of Joseph having been embalmed previous to interment. Moses for himself, indeed, sets up no such claim. On the contrary, he acknowledges that he acquired knowledge from the people among whom he sojourned in captivity,—that he was learned in all the learning of the Egyptians.

(1) Prometheus n'est autre qu'un emblème ou une prosopopée de *l'esprit*, et de *l'industrie* de l'homme, ou de sa *prévoyance*, (*Προνομήα*), qui lui a fait découvrir tout ce qui étoit utile pour la vie et pour la société. Le Clerc, lib. i. chap. 3.

(2) See *Bibliothèque Universelle et Historique*, tome iii.; Cicero de *Natura Deorum*, lib. iii.; Diodorus Siculus, lib. i. cap. 15.; and Sanconiaton, lib. i.

(3) Eusebii *Preparationes Evangelicæ*, lib. ix. Bochart, in his *Phaleg*, identifies Cronos, or Saturn, with Noah.

The contenders for the antiquity of chemistry are fond of bringing forward the calcining of the golden calf, as a proof that he was acquainted with the fundamental doctrines of that science. Humanly considered, this seems to be true; but the circumstance is only related as one of a succession of miracles.

Regarding the pillars of Hermes, which are said to have been covered with medical precepts in hieroglyphics, it is not necessary to say much; nor of the books which were preserved with so much care and mystery in the ancient Egyptian temples. One of these is particularized by Diodorus Siculus as the Sacred Book, according to the doctrine of which the physicians of the land were obliged to regulate their practice—a departure therefrom being punishable with death, on the proof that a patient was lost under these circumstances. <sup>(1)</sup>

Medicine appears to have been very early seized upon by the priests, as an instrument of great power; and thus mixed up and blended with religious superstitions, it was practised by a sect of the Egyptian priesthood, under the denomination of *Pastopheri*. <sup>(2)</sup>

(1) Diodorus Siculus, lib. i. *Vide* observations on the subject of early Egyptian Medicine, in Jamblicus de *Mysteriis Egyptiorum*; Clemens Alexandrinus *Stromat.* lib. vi.; Galen de *Facultat. Simplic. Med.* lib. vi. Jamblicus and Galen express great doubts as to the authenticity and reputed age of the forty-two books imputed to Hermes; setting them down, with every shew of probability, as a sinister invention of priestcraft.

“Si jamais il a recut,” says Sprengel, “un Hermès en Egypte, tout au plus doit-on presumer qu’il a cherché à transmettre sa science à la postérité, dans un langage pratique et symbolique, facile à inculquer dans la mémoire, ce qui est plus raisonnable que de lui attribuer des ouvrages dont l’origine est probablement très-récente.” *Histoire*, Lec. Sec. chap. 1.

(2) *Pastopheri*. C’étoit une espèce de Prêtres, ainsi appelés, parce qu’ils

According to Clemens Alexandrinus, these physicians were called upon to study the six books of Hermes, which related to the Healing Art; one on Anatomy, another on Disease in general, a third on Instruments, a fourth on the Materia Medica, a fifth on the Affections of the Eye, and a sixth on Female Ailments. <sup>(1)</sup>

These divisions of the Art show, however, an experienced knowledge, not easily reconcilable with their alleged antiquity; and which renders it highly probable that the writings alluded to were spurious: and not the work of Mercury, but of the sacred physicians themselves, aware of that tendency in human nature to add a more weighty authority to whatever is wrapt in religious mystery. <sup>(2)</sup> We can the more readily believe this, since the whole Egyptian system appears to have been grounded on incantations and astrology, with little or no reference to fact or experience. They are said to have acknowledged thirty-six demons, who divided the body of man among them, each having his ascribed portion: and that it was necessary to invoke a particular spirit according to the place affected.

portoient de longs manteaux, ou parce qu'ils servoient a porter le lit de Venus, en certains jours de cérémonies. Ces Pastophores étoient principalement ceux qui pratiquoient la medecine en Egypte. Le Clerc, lib. i. chap. 5.

(1) Diodorus Siculus mentions these treatises generally, under the name of the Sacred Book. Diod. Sic. lib. i. chap. 82.

(2) La haute medecine, qui paraissait compter bien plus sur les formules magiques et l'assistance des demons, que sur les vertus de medicaments, étoit reservée aux prêtres superieurs. Sprengel, Lec. Sec. chap. 1.



## CHAPTER II.

## MYTHOLOGICAL ERA OF MEDICINE CONTINUED—PRACTICE AMONG THE ANCIENT GREEKS—ESCULAPIUS—THE ASCLEPIADES.

PASSING from the meagre and unsatisfactory accounts of the origin and practice of medicine among the Phenicians and Egyptians, we come to the scarcely less fabulous era of the ancient Greeks, who put in their claims as an inventor for Pæon—who has been asserted by some to be Esculapius, and by others Apollo himself. <sup>(1)</sup>

Regarding Apollo, the same remark applies as to Prometheus. He is merely the idea of light, or illumination. <sup>(2)</sup> Hence, as the eye of the world, or

(1) Eustathius and Servius maintain that both Homer (*Iliad*, i.) and Virgil (*Æneid*, iv.), designate Apollo under the appellation of Pæon. The latter maintains that it is a Doric word, in the usage of which language *o* is changed to *a*, which accounts for the burthens of the hymns to Apollo being to Pæon. Others maintain, that by Pæon is meant Esculapulus. *Vide* Cicero de *Natura Deorum*, lib. ii. Artemidorus de *Somnlorum Interpretatione*, lib. ii. c. 42.

“Les passage d’Hesiode, cité par Eustathe,” says Sprengel, “nous prove que cet ancien poete lui-même, ne confondit pas Apollon et Pæon ensemble. Nous ne voyons non plus, dans la *Theogonie*, rien qui annonce qu’il attribuat des connaissances medicales à Apollon.” *Medecine des Anciens Grecs*.

(2) Hyginus *Fabular*, lib. i.

the Sun, he is reputed to have been the first oculist, and, as throwing lustre on the shadowy, to have been the God of Divination—an art which seems to have originally constituted by much the greater portion of the practice of physic, and still adheres to it, although in a modified shape, under the term of Prognostics. <sup>(1)</sup> But although “Io Pæan” be the general burden of the hymns dedicated to Apollo, there is ample room for the supposition, that the Pæon, both of Homer and Virgil, was none other than Esculapius, who is also mentioned by Aristophanes, in the *Plutus*, under the same surname. <sup>(2)</sup>

Of Chiron the Centaur it is not necessary to say much, his story having so many fabulous interpolations. Born in Thessaly, a country renowned of old for its breed of horses, and probably himself an expert equestrian, superstition has achieved greater anomalies than converting him into a monster half man, half horse. <sup>(3)</sup> From his having applied herbs externally to wounds and sores, and from the etymology of his name, we may presume that he was the father of surgery. <sup>(4)</sup> He is said to have dwelt

(1) “D’autres ont cru que l’on a joint l’art de deviner à celui de guérir les maladies, en vue du *pronostic* des médecins, on de ce qu’ils prédisent quelquefois ce qui doit arriver à un malade dans la suite de sa maladie, qui est ce qui fait le plus d’honneur à leur profession.” *Le Clerc*, prem. part. lib. i. c. 8.

(2) *Aristophan. Plut. v. 8.*

(3) Il étoit de *Thessalie*. L’on afeint que ce pays étoit la patrie de ces monstres, parce que les Thessaliens, ayant étoit les premiers qui se sont appliquer à domter des chevaux, ceux qui les vivent de loin à cheval. Se figurèrent que l’homme et le cheval ne faisoient qu’un même corps. *Le Clerc*, lib. i. c. 10.

(4) *Χειρ*, de ce mot vient celui de *Chirurgie*, qui signifie mot à mot *Operation de la main*.

in a cave of Mount Pelion, where the great men of his time resorted to him for instruction in the healing art. <sup>(1)</sup>

The origin and history of Esculapius has been a theme of much classical disputation. The Greeks claim Esculapius for themselves, as the son of Apollo, and a disciple of Chiron; whereas the Phenicians contend that he was a pupil of Hermes.<sup>(2)</sup> Be this as it may,—and we rather adhere to the Phenician claim, from the derivation of the term “Is Calaphot,” signifying “a man of the knife,”—Esculapius is the most generally accredited of all the supposed inventors of the healing art. <sup>(3)</sup>

That some eminent person of this name once existed, there can be little doubt; and it is probable that he shed such a distinguished lustre over his pursuits, that others, eminent in the same way, if not to the same degree, had it afterwards assigned them. Cicero mentions three persons of this name

(1) Zenoph. Cyneget. p. 972-3. Apollon. Rhod. lib. ii. ver. 508. Scol. Apollon. Rhod. lib. i. ver. 555.

(2) “Il y a en peu de héros Grecs du temps des Homérides qui n’aient reconnu le centaure Chiron pour leur maître dans toutes les sciences et les connaissances humaines. Xenophon nomme, parmi ses disciples, Céphalé, Esculape, Mèlanon, Nestor, Amphiaraus, Pelée, Telamon, Meleagre, Thésée, Hippolyte, Palamède, Ulysse, Menèsthee, Diomède, Castor, Pollux, Machaon, Podalire, Antiloque, Enée, et Achille. J’y ajoute, encore Aristée et Jason. Chiron leur enseigne la Musique, la Législation, l’Astronomie, la Chasse, et la Médecine.” Sprengel, Med. des Anciens Grecs.

(1) *Vide* Le Clerc, Histoire, part. i. liv. 1. c. 9.

(1) Bochart derives Asclepius from the Phœnician *Is Calabi*, signifying *Caninus*. Junius, the father-in-law of Vossius, derives the same word from *Ascalaphus*, which signifies to change. (Vossius de Philosophia). “But in the same tongue,” says Le Clerc, “we find the words *Is Calaphot*, a man of the knife, which etymology appears the more just, in that it expresses perfectly his profession, his principal talent being surgery, as shall be shewn.”

who were deified, and to whom different inventions in medicine were ascribed.

Galen claims the veritable Esculapius for Greece, and maintains, that, prior to the age in which he flourished, the art of physic was a rude and indigested mass.<sup>(1)</sup> There can be no doubt of this assertion, for it remained so for long after them.

It would appear, that, among the early Greeks, Apollo was more generally recognised as the patron and god of physic,<sup>(2)</sup> and that the practice of medicine was confined almost exclusively to the priests officiating in the temples dedicated to his worship. His godship had, however, two strings to his bow, and divination was found fully more easy, and a great deal more lucrative, than the management of patients, many of whom continually died in despite of the doctors, and threatened to bring their infallibility into discredit.<sup>(3)</sup>

The ministers of Apollo thus principally confining themselves to augury and soothsaying, the temples of Esculapius came to be more pre-eminently noticed as depositaries of medical and surgical knowledge.

(1) "Galen's Introduction, seu Medicus. Although this book is placed among Galen's works, its authorship is by no means certainly his, being ascribed by some to the physician Herodotus.

(2) Theocritid Idyll, E. v. 83.

Τὰ δὲ Χάρμια καὶ δὲ ἐφ' ἑρπεί.

Diodor. Sicul. lib. v. c. 74. p. 390. Galen Protrept. p. I. Lucian. Philopatr. p. 767. &c. &c.

(3) "I rather think," says Dr Drake, "that the priests, who were the first professors of both arts, introduced divination first into physic, that they might supply their defects in the latter by the imaginary helps of the former, and support their credit jointly by both, which they could not by either impart." Note on Le Clerc.

more especially those of Epidaurus, Pergamus, Cos, and Cnidos.

These temples were spacious and elegantly constructed, with commodious lodgings alike for patient and priest. The former were not, however, allowed to die within them; and, when symptoms threatening to prove mortal made their appearance, were conveyed thence to some convenient situation in the neighbourhood. <sup>(1)</sup>

The Asclepiades, or presumed descendants of the Deity, took care to record on the walls and pillars of their respective temples the histories of the more particular cures that had been effected within them. They had also their particular code of medical precepts and recipes, according to which their cures were treated. The affluent, who had derived benefit from the prescriptions of the priests, had their cases recorded on metal or marble, and these tablets were hung around the shrine as recommendations.

If we may credit the account given by Lactantius, the Thessalian Esculapius was, shortly after birth, exposed by his parents on the hills, whence he was taken home and nursed by some benevolent hunters, studied at Mount Pelion under the Centaur Chiron, and practised at Epidaurus. <sup>(2)</sup>

Contrasted with his contemporaries, he may have

(1) "The ancient priests, according to Plutarch, erected their temples on high grounds, and with a fine exposure. The air respired in them was naturally pure from the elevation of the soil, and was rendered still more salubrious by the woods which encompassed the temples." *Sketch of the Revolutions of Medical Science*, by P. J. C. Cabanis. Trans. 1806.

(2) Lactantius de Falsa Religione, lib. i. c. 10.

been reckoned a proficient in the healing art; but after all, it is quite certain that his medical prescriptions were circumscribed within a very narrow compass. Indeed, if he knew any thing peculiar, it must have been in the elementary and more prominent parts of surgery. Celsus, in the preface to his admirable work, makes the following pertinent observations, to which indeed nothing need be added:—"Esculapius," he says, "is the most ancient author recorded in the Grecian annals; and for refining the science of medicine, which was before extremely rude, he was deified by them. His two sons, Podalirius and Machaon, followed Achilles to the Trojan war, where they were eminently serviceable to their fellow-soldiers. Of their ability to stay the plague, Homer makes no mention, nor that they cured any internal diseases; but that they cured wounds by incision and lenitives. It is evident from this, that they kept to this part of physic alone, and that it is the most ancient." (1)

Esculapius is said to have laid the foundation of clinical medicine—in other words, he was the first physician who made regular visits to the bedside of his patients. (2) There is also every probability that, in his practice, he made use of emetics and purgatives, and incisions and ointments. (3) When his potions and lenitives failed, he appears to have had unlimited faith in the power of music and incan-

(1) Celsi Præfatio, p. 1, 2.: etiam Plin. lib. xxix. c. 1.

(2) Hygin. Fabul. Κλινη, a bed, hence Κλινικὸς.

(3) Galen. de Sanitat. Tuend lib. i. cap. 8. Μαλακκαις επαοιδαις. Pin-dar. Pythior. Od. iii.



tations. Verses were chaunted to the sick, charmed words whispered into the ear, and magic sentences under the form of amulets or talismans hung about the neck. As under the influence of imagination, these did, or apparently seemed to do good, priest-craft, thus doubtless materially strengthened its juggles.<sup>(1)</sup> When applied, for instance, towards the crisis of fevers, a belief in their potency might easily be induced, all men being able to witness, but few to argue. Nor need we marvel at these things, since in days much nearer our own, French and English kings touched for scrofula; and the bite of the tarantula was cured by the performance of a piece of music.

Why the attention of the ancients was more particularly directed to surgery, is a question admitting of ready explanation. Internal diseases are less manifest in their symptoms, are more complicated, and even, when their nature is known, less readily admit of amelioration. Besides, when it happened that a cure was performed, it is likely that neither physician nor patient were very well aware of the extent of the danger which had been incurred. Bruises and broken bones, dislocations, and bleeding wounds, offered more direct subjects for speculation, and, in their treatment, more assured honour redounded to the practitioners.<sup>(2)</sup> Homer is conse-

(1) For some excellent remarks on this subject, see Le Clerc, *Histoire*, par. prem. liv. l. c. 12. De Charmes, &c.

(2) It is not unworthy of remark, that Napoleon Bonaparte was very sceptical as to the relief afforded by internal remedies, while he had the highest respect for surgery. He thought the physician a mere dabbler in the dark, but that the benefits of manual operation were incontestable, because visibly shewn. See O'Meara's *Voice from St Helena*.

quently obliged to call in the Gods to assuage the pestilence which ravaged the Grecian camp, although, by staunching the wounds of Hippolytus, who was grievously torn by horses,<sup>(1)</sup> it is reported of Esculapius that he could restore even the dead to life.

Of his two sons, Machaon seems to have been the most distinguished, although we hear of nothing in his practice different from that of his father.<sup>(2)</sup> Podalirius is reported to have been the first phlebotomist, having practised that operation on either arm of Syrna, his future wife, a daughter of the king of Caria, who had nearly met an accidental death, by falling from a house-top. When the patient recovered, her physician was rewarded with her hand, her munificent father giving him the Chersonese as her dowry.<sup>(3)</sup> This was a fair beginning surely; but we doubt if blood-letting has ever been so liberally rewarded since.

We had almost omitted to notice Melampus, who lived two centuries anterior to the Trojan war; although, by poetical license, Virgil mentions him in his third Georgic, as a contemporary of Chiron, who flourished at that period.<sup>(4)</sup> He is supposed to have been the first who used purgative medicines<sup>(5)</sup>—a circumstance perhaps implied in his surname<sup>(6)</sup>—as

(1) Pindar Pythior. Od. iii. Virgil Æneid, iii. Clemens Alexandrinus. Vossius de Historicis Græcæ. lib. iii. p. 11.

(2) Eustathius on the fourth book of the Iliad.

(3) Stephan. Byzantin. de voce Syrna.

(4) Porphy. de Abstinentiâ, lib. iii. Apollodor. Bibl. lib. i. c. 9. Scol. Apollon. Rhod. lib. i.

(5) Herodot. lib. ix. c. 33.

(6) Servius on the third book of the Georgics. He says that Melampus was surnamed Κηλεύκτης.



also the rust of iron, which is the first medicinal mention of a metallic substance being administered internally. <sup>(1)</sup>

Melampus was also skilled in the arts of poetry and divination. <sup>(2)</sup> In his former capacity as a poet, he composed largely on the mysteries of Ceres, and the lamentations of that goddess for her lost daughter,—for which labours he received immortality in the mention of Homer alone, his own works having perished. <sup>(3)</sup> As an augur he was equally noted, and, among other mysteries, understood the language of birds. The treatises which bear his name are on the methods of foretelling fortunes by palpitations, and by moles or marks on the body, and are regarded by the best informed judges as spurious. Hellebore appears to have been his favourite drug; <sup>(4)</sup> but as it did not prove a panacea, he had recourse, on its failure, to charms and incantations.

According to Herodotus, it was customary at ancient Babylon to carry out the sick, the halt, and maimed, to the markets and places of public resort, to gain advice from the passers by. <sup>(5)</sup> Strabo relates a similar custom as characteristic of the Portuguese. <sup>(6)</sup>

(1) Dioscorides, lib. v.

(2) Ælian, lib. xii. c. 34.

(3) C'est un des plus anciens Poètes dont on ait connaissance, et dont Homère lui-même fait mention. Il avoit écrit plusieurs milliers de vers sur le deuil de Ceres à l'occasion du rapt de Proserpine, fille de cette Deesse, et sur d'autres sujets. Le Clerc, prem. part. lib. i. c. 9.

(4) On this account a species of this plant was named Melampodium. Dioscorides, lib. iv. c. 181.

(5) Herodot. lib. i. c. 197.

(6) Strabo, lib. xvi. Plutarch, περὶ τῆς λαοφίας.

Both the Chaldeans and Babylonians were fond of blending astrology with medicine; for it is a noble folly of our nature to wade in the stream of research beyond our depth. Even the penetrating and masculine mind of Hippocrates could not wholly shake off this propensity of accounting for the unaccountable by stellar influence.

The original physicians of the Jews appear also to have been of the priesthood. Solomon is said to have been the author of a set of medical precepts and recipes, exhibited in the porch of the temple at Jerusalem;<sup>(1)</sup> and we are informed in Scripture not only of his general learning, but of his botanical knowledge.<sup>(2)</sup> What we have of Hebrew medicine is quite fragmental, except in the description of leprosy, which is fuller, and replete with just observation.

(1) Suidas remarks that these precepts were engraved in the vestibule of the temple. *Vide etiam* Josephus, lib. viii. c. 2.

(2) Kings, book i. chap. 4. v. 29-33.

## CHAPTER III.

MYTHOLOGICAL ERA CONTINUED—THE ASCLEPIADES  
—SCHOOLS OF RHODES—COS—CNIDOS—AND ITALY.

IN the same spirit of mythological fiction, which actuated the Greeks in their ideas of Prometheus and Apollo, we find four daughters attributed to Esculapius, by Epione, his wife; the etymologies of whose names distinctly point them out to have been creatures of fancy. Hygæia, or Health, is said to be the daughter of Esculapius, because healthy life is dependent on Air; Ægle, because an atmosphere purified by sunshine is the most salubrious; Jaso is a synonyme for healing; and Panacea, for a universal remedy. <sup>(1)</sup> Arguing in the same spirit, Podalirius and Machaon are celebrated by Homer as the sons of Esculapius, probably for no other reason than their having been particularly eminent among the Greek soldiery for their surgical knowledge; or as it is customary among ourselves to call an actor the son

(1) L'etymologie de tous ces noms fait voir que ce n'est ici qu'un jeu d'esprit, et une continuation de la fiction, par laquelle on a introduit *le Soleil* comme l'auteur de la Médecine sous le nom d'*Apollon*. Le Clerc, liv. i. chap. 19. *Vide et Pausanias de Achaïcis*. "C'est encore une allegorie moderne, de l'invention des poëtes et des artistes." Sprengel, tom. i. p. 135.

of Thespis, or a lawyer of Themis. In the same style, after setting down Pæon as physician to the gods, Homer in a general way informs us that physicians were of his race.<sup>(1)</sup>

With reference to this era, we may allude to the names, at least, of Orpheus and Musæus; the former being mentioned by Pliny as the earliest writer on the virtues of plants,<sup>(2)</sup> and the other, who is reputed to have been his scholar, having received landation from Aristophanes, as one who taught men sundry remedies for disease.<sup>(3)</sup> Linns also commemorates the noble art, which restores happiness to the drooping, and health to the diseased; and Hesiod. in the “Works and Days,” discourses of diet and medicine.<sup>(4)</sup>

Taking Homer as our general authority, we may conclude that the healing art was in a very rude state among the ancient Greeks. Of surgery they seem to have known little more than the simple method of

(1) Hence the Greek adjective *παιώνιος*, medicabilis; and the term *παιωνία χειρ*, medica manus. Virgil has also the words *Pæonium in morem*, to signify “after the manner of a physician.”

(2) *Primus omnium, quos memoria novit, Orpheus de herlis curiosius aliqua prodidit.* Plin. lib. xxv. cap. 2. *Vide et* Galen de Antedotis, lib. ii. p. 445.

(3) Aristophanes, in *Ranis*, act iv. scene 2. Concerning Musæus, see also Clemens Alexandrinus, (lib. i. p. 332.), who maintains, that he was the master of Orpheus. Pausanias, lib. i. c. 22. Diodorus Siculus, lib. iv. c. 25. The *Il Penceroso* of Milton also occurs to the poetical reader,

of power

To draw Musæus from his bower.

(4.) Hesiode, qui a été à peu pres contemporain d'Homere, est aussi cité par Theophraste, par Plin, et par d'autres, comme ayant écrit des propriétés des plantes; par ou il tient rang entre les medecins. Le Clerc, p. 89. *Vide etiam* Theogon. Hesiod, v. 920. et seq.

extracting a barbed arrow from the flesh, by means of incision; the checking of hemorrhage, by styptics or pressure; and the application of lenitive salves. It was customary to wash wounds with wine.<sup>(1)</sup> Regarding medicine, they appear to have been acquainted with several vegetable emetics and purgatives; and, if tradition "is to be in aught believed," the hot baths of Ionia, named after Agamemnon, point out that remedy as not then unknown. From what we are told about the real and fabulous qualities of Nepenthe, it is beyond a doubt that they were acquainted with the use of narcotics, and, bating a few imaginary virtues ascribed to it, we can almost reconcile ourselves to the belief that it was neither more nor less than opium;<sup>(2)</sup> an idea that is countenanced by our being told that it was an importation from Egypt. Diana is said to have discovered the properties of wormwood;<sup>(3)</sup> Pallas of feverfew;<sup>(4)</sup> Angitia the art of extracting poison from plants;<sup>(5)</sup> Medea the use of the bath;<sup>(6)</sup> and Circe the effects of nightshade.<sup>(7)</sup> The diseases of little children was intrusted to the matronly care of Cybele, the mother of the gods.<sup>(8)</sup>

(1) Iliad, xi. 841, xv. 393, et plurimis aliis locis.

(2) The qualities ascribed to this remedy may be readily guessed from the etymology of the name, *νῆ* and *πένθος*, dolor. We are told in the Iliad, that Helen procured her Nepenthe from Egypt.

(3) "Diane s'appelloit autrement *Artemis*. Vegetius appelle l'Armoise *Dianaria*."

(4) Pastor, lib. v. Plutarch in Vita Pericli. Like her brother Apollo, she also possessed the gift of prophecy. Vide Stephan. Byz. Voc *Θρια*, p. 401.

(5) Sil. Italic. lib. viii. Macrobi. lib. i. cap. 10.

(6) Palaphat. Fabul. lib. i.

(7) Aul. Gell. lib. xvi. cap. 11. Solin. cap. viii. Cicero de Natura Deorum, lib. iii.

(8) Diodor. Sicul. lib. iv.

For a very long period after the wars of Troy, we have almost no account of the state or practice of physic; and when the subject again starts into complete view, under the auspices of Hippocrates, it is wonderful to find how little has been added to it by the accumulating experience of seven hundred years. Pliny affirms, that during that extended time, it lay in the most profound darkness—a circumstance not easily to be believed, in a literal sense; although, with the exception of Pythagoras, who lived in the seventieth Olympiad, no name of particular note has been handed down to us.<sup>(1)</sup>

According to Isidorns of Seville, a writer of greater imagination than authority, the reason of all this was, that Esculapius being killed by the thunderbolt of Jupiter, the art was interdicted by the divine command of Apollo; and lay buried until again brought to light, after a long succession of ages, by Hippocrates, a native of the isle of Cos, in the reign of Artaxerxes of Persia. Many of these mythological allegories appear more ingenious and beautiful the more narrowly they are examined.<sup>(2)</sup>

From the practice of the healing art, after the death of Esculapius, being confined to particular families, in which remedies were handed down from father to son, it became their interest, as empirics, to communicate their instructions to each other orally; at least, such is the plausible supposition of the

(1) Plin. lib. xxix. cap. 1. Celsi, Prefat. in lib. i.

(2.) Vide Le Clerc, Histoire, part. prem. lib. ii. cap. 2. Origen, lib. iv. cap. 3.

learned Le Clerc, when attempting to account for the absence of medical writings during this long period.<sup>(1)</sup> This was not the most felicitous plan, however, for the advancement of knowledge, although completely suited to the end in view with the Asclepiades, who practised in the temples, and whose prescriptions were only such, as experience having seemed to approve of, were transmitted from generation to generation, as heir-looms. The whole system appears to have been one of routine; the priests neither reasoning on the causes of disease, nor the operation of remedies. In this state of matters, tradition soon lost the names of such as attained a little personal notoriety, and the peculiarities of individual practice were consequently soon lost.

We are informed by Plutarch that the Asclepiades were aware of the importance of having their temples erected in situations<sup>(2)</sup> noted for salubrity from the fineness of their exposure. Elevated situations were generally fixed upon, commanding a beautiful prospect, and the vicinity planted out with great taste. The sick were thus induced to pay visits to these delightful resorts, and probably derived more benefit from the free exercise and the fresh air, than from the worm-eaten recipes of the physicians, who, in the latter ages, became notorious for fraud and imposture.<sup>(3)</sup>

(1) Histoire de la Medecine, prem. part. lib. li. chap. 3.

(2) Plutarch Quest. Roman. p. 286. Pausan. lib. vi. cap. 26. Aristot. Orat. Sacr. tom. i. p. 590.

(3) *Vide* Cabanis, Revolutions de Science Medicale.



We have said that these early physicians forgot to chronicle their cases, nor have the historians faithfully done for them the better part of the task, in giving us the general results of their experience ; for tradition has been so mixed up with fable and superstition, that it is scarcely more to be depended on than the lay of the poet. The frailties of man must have been for ever calling for the exercise of medical skill ; nor is it easy to suppose, in a matter of such vital and selfish interest, that any thing, once discovered to be valuable, would ever be permitted to fall afterwards into disuse. It is pretty evident, however, as Celsus observes,<sup>(1)</sup> that no physician of highly original talent appeared between the death of Esculapius and the rise of Hippocrates ; a name to which, if the merit of discovering the healing art be denied, it certainly owes as much as to any that has appeared either before or since.

During the long period alluded to, the practice of medicine, as we have mentioned, was nearly confined to the Asclepiades, or ministering priests of the Esculapian temples. Their history is said to have been recorded by Arrius of Tarsus, Apollodorus, and others, whose works have been long ago lost. From one of the branches of this tribe, the Asclepiades Nebrides, Hippocrates was descended ;<sup>(2)</sup> and is reputed to have been the fifteenth in lineal issue from the deified founder.<sup>(3)</sup>

(1) Celsus in Prefat. lib. i.

(2) Sprengel, tom. i. sec. trois. chap. trisieme.

(3) Le Clerc, liv. ii. part i. chap. 2.



The Asclepiades were the founders of three celebrated schools of medicine, the most ancient of which was at Rhodes, another at Cos, and a third at Cnidos. Between these a spirit of honourable rivalry appears to have existed.

The school of Rhodes was the first to fall into decay, and that considerably prior to the time of Hippocrates.<sup>(1)</sup>

In his day the schools of Cos and Cnidos were in a flourishing condition, if such an epithet can with propriety be applied to the mixture of empiricism and magic then constituting the staple commodity of the medical art.<sup>(2)</sup> Cnidos gave the world two physicians of considerable eminence, Euryphon the compiler of the Cnidian sentences,<sup>(3)</sup> and the historian Ctesias, who practised at the court of Artaxerxes.<sup>(4)</sup> Hippocrates, however, was soon destined to give the school of Cos a deserved and lasting pre-eminence.

The school of Italy, mentioned by Celsus, was coeval with the latter times of those of Cos and Cnidos. Mention is also made by Herodotus of the school of Cyrene, whose doctrines were somewhat different from those taught among the Greeks; and of another at Crotona, founded by Pythagoras.<sup>(5)</sup>

From this latter went Damocedes, a cotemporary

(1) Galen, *Method. Med.* lib. i.

(2) Nonn. *Dionys.* lib. xiv. p. 306. Arrian. *Exped. Alexandr.* lib. ii. c. 5. p. 92. Pausan. lib. ii. c. 11. lib. iii. c. 22.

(3) Galen *Comment.* in Hipp. de *Victu Acut.* p. 42.

(4) Diodor. *Sicul.* lib. ii. c. 32. Fabric. *Biblioth. Grec.* vol. ii. p. 470. Ed. Harles.

(5) Herodotus, lib. iii.

of Pythagoras;<sup>(1)</sup> and, settling at Athens, rose into great repute. He is said to have been presented with two talents of gold by Polycrates, king of Samos, for having cured him of some troublesome distemper, the nature of which is not mentioned by Herodotus, who records the story.<sup>(2)</sup> While in captivity among the Persians, he is said to have had Darius under his care for a dislocated ankle, and his queen Atossa for a cancer in the breast. Honours were lavished upon him for his skill and wonderful cures; but such was the power of early associations over him, that they were ineffectual to banish the remembrance of his native country, and the scenes of childhood; to which he at length, by assuming a disguise, contrived to effect his escape.<sup>(3)</sup>

From the notices of the Cnidian and Coan schools made by Hippocrates, we come to the general inference, that, however attentive their disciples might have been to the observation and enumeration of individual cases, they were not in the habit of instituting general conclusions from the comparison of symptoms, of scrutinizing the causes of diseases, or of forming prognostics regarding their probability of cure. In other words, they had an immense unnecessary accumulation of facts concerning the mere casualties of practice, but never dreamed of forming a philosophy of medicine, by reducing them into

(1) Iambl. Vita Pythag. c. xxxv. p. 217.

(2) Herodot. lib. iii. c. 125.

(3) Le Clerc, Hist. prem. part. liv. ii. chap. 2.

elementary principles, and arranging them into a system.<sup>(1)</sup>

Galen has contended for the acquaintance of the Asclepiades with anatomy. He tells us, that, from early childhood, their sons were instructed regarding the knowledge of the human frame; in fact, that they were taught their anatomy and their alphabet together:<sup>(2)</sup> but if the ancient commentators on the writings of Plato be correct, such an assumption is visionary and unfounded.<sup>(3)</sup> With the more prominent elementary parts, such as the position and connection of the bones with each other, it is but reasonable to suppose that they could not be altogether ignorant, as the reducing of fractures and dislocations must have early assisted them in such investigations; but from human dissection being prohibited as a study,<sup>(4)</sup> it could not otherwise be than that

(1) Tout ce qu'on vient de dire prouve qu'il n'est pas si absolument vrai, que Plin et Celse l'ont cru, qu'on n'ait point eu de nouvelles de la medecine pendant l'intervalle qu'ils marquent, et encore moins que la medecine n'ait commencé qu'en même temps que la philosophie, comme l'assure le dernier; si ce n'est qu'il ait entendu parler de la medecine *raisonnée*, c'est à dire de cette *qui s'attache particulièrement à la recherche des causes cachées des maladies, et à rendre raison de l'operation des remedes*. A la verité celle-ci ne peut quere avoir commencé qu'avec l'etude des lettres et des sciences. Le Clerc, Prem. Part. liv. il. c. 2.

(2) Galen, Administr. Anat. lib. ii. p. 123.

(3) Plato, Politic. i. p. 399.

(4) According to the Athenian law, all those who died in a state of orphanage were commanded to be interred on the same day that they died, under a fine of a thousand drachmas to the public treasury.—*Ide* Demosthen. in Macartat. p. 1069. Tradition reports that the Spartans dissected their mortal enemy Aristomenes the Messenian, to see how his body was otherwise constituted than that of other men, and found his heart stuffed with hairs. *Ide* Plinii, xi. 33, and Stephan. Byzant. voce *Ανδανία*, p. 129. Pausanius affirms, on the contrary, that he died a natural death at Rhodes, and that his bones found sepulture at Messena.

their notions of the minute structure of the body were rude, theoretical, and erring ; being wholly educed either from comparative anatomy, or the instruction of the Egyptians, among whom the practice of embalming afforded ampler scope for observation. In fact, to confute the assertion of Galen, that anatomy had acquired any thing like perfection among the Asclepiades, it is only necessary to say, that, at the time of Hippocrates, it was full of errors, as will be briefly shewn when we enter upon its examination.<sup>(1)</sup> The Asclepiades being the priests who ministered in the temples dedicated to Esculapius, possessed only opportunities of acquiring anatomical knowledge from the dissection of the lower animals, presented as offerings or sacrifices ; a cunning law of the temple commanding every portion of these to be consumed within the sacred walls.

The touch of a dead body being a profanation alike with Jew and Greek, it is not easy to see how anatomy could be advanced among the ancients.

(1) Il est hors de doute que les Grecs avaient sur l'osteologie et la syndesmologie quelque notions suggerés par le traitement des luxations, des fractures, et des autres maladies des os. Lorsque je tracerai l'histoire d'Hippocrate, j'examinerai plus amplement quelle etait l'etendue de ces connoissances. Sprengel, tom. i. p. 175.

## CHAPTER IV.

PYTHAGORAS—EMPEDOCLES—ALCÆON—ACRON—  
HERODICUS—HERACLITUS—DEMOCRITUS.

HITHERTO the history of Medicine has been that of a rude art. It was a chaos of undigested facts, unilluminated by the sunshine of philosophy. Its details were merely practical; the results of every day experience, or the singularities that had appeared under particular circumstances, probably never to shew themselves again. Little attention seems to have been paid towards searching out the causes of disease, or the indications for its cure. Remedies were tried empirically and at random. When these failed, recourse was had to mystery and magic, charms and incantations.

The subtle and penetrating genius of Pythagoras was at length diverted to medicine, although, perhaps, only as a branch of the general scheme of philosophy, which his researches comprehended.<sup>(1)</sup> That he made any great original advances in the healing art is not very well established; but he was eminently useful in another way. Having trea-

(1) Porphy. Vit. Pythagor. ab initio.

sured up in his mind all the medical knowledge of the Egyptians among whom he travelled, he speculated on their doctrines, examined their modes of practice, and, by his influence and example, gave an impulse to other minds.<sup>(1)</sup>

That what are handed down to us as the medical theories of Pythagoras partake less of philosophy than superstition, is in many instances too true ; although, in the absence of more certain documents, it would be hard to judge of him by the traditions, which were but too apt only to preserve the supernatural and striking, while they allowed the useful and the true to fall into oblivion.

It does not, however, appear that Pythagoras, or indeed any of his immediate followers, save Empedocles, actually practised physic. They can only be regarded as physiologists, or speculators on the functions of the body, and on the rationale of diseases. A law of harmony pervading the universe was the grand doctrine on which their philosophy was based.<sup>(2)</sup> By it Pythagoras taught that the whole existence of man was regulated from the moment of conception, and that it unfolded itself in a series of actions, which were only parts of a consistent whole. He regarded the nerves, veins, and arteries, as the cords of the soul ; the heart as the source of the affections ; and the brain of the reasoning powers ;—doctrines, in all of which there is at least much beauty and ingenuity.

(1) Cicer. de Finibus, lib. v. c. 29. Clem. Alex. Stromat. lib. i. p. 302.

(2) Aristot. Metaphys. lib. i. c. 5.

In accordance with the same philosophy, he regarded health as the harmonious performance of all the animal functions; but contended, with less truth, that this harmony could be best preserved by abstinence from animal food, and living only on vegetables and water. No greater proof of his sincerity can be adduced, than that he practised this doctrine in his own life. <sup>(1)</sup>

That many extravagances, and some absurdities, are mixed up with the memory of Pythagoras is not to be denied; but so are there with that of Friar Bacon, a man no less extraordinary, who flourished so many centuries nearer ourselves. He followed the Egyptians and the Magi in many of their superstitious notions regarding the origin of diseases, and the virtues of plants,—but accounts for them all by a theory of his own—the power of numbers. <sup>(2)</sup>

Relating to Empedocles, we have a few practical details of considerable ingenuity and interest. He imputed the unhealthiness of a certain province to the effluvia arising from stagnant waters, and, by digging canals, whereby he connected the channels

(1) On the peculiar doctrines of Pythagoras, *vide* Meursius de Denario Pythag. c. v. p. 56. Diogen. lib. viii. sect. 23. et Kuhnus, De Philosoph. ante Hipp. Medicinæ Cultor. p. 252 in Ackermann. Opus. ad Med. Histor.

(2) The learned Sprengel denies this attribute of the Pythagorean philosophy, and with every shew of propriety. The testimony of Sextus Empiricus on the subject is more than neutralized by Aristotle, who, in his admirable account of the ancient systems of philosophy, says nothing that would lead us to believe that the vague speculations regarding the properties of numbers formed any part of the Pythagorean. It appears to have been his followers Moderatus and Nicomachus, who afterwards introduced into his system the illusory doctrine of the primitive numbers being able to determine all the changes of the universe.



of two rivers, produced a current which removed the source of infection. Every thing considered, the philosophy of this step cannot be sufficiently admired. <sup>(1)</sup> His ideas regarding the formation of animals were not widely different from those afterwards more popularly promulgated by Lucretius and Harvey; nor is his theory of the physiology of hearing almost at all different from that which at present obtains. <sup>(2)</sup> His contemporary Alemæon made an almost equal approach to truth in his physiology of the sense of taste. <sup>(3)</sup>

Alemæon deserves particular celebration from his being the reported father of Comparative Anatomy. Religious prejudices so completely standing in the way of human dissection, he is said to have applied himself assiduously to the study of the organization of such of the lower animals as might be supposed more nearly to resemble man in their structure.

Empedocles was born at Agrigentum, in Sicily; and flourished about the 84th Olympiad. He perished by an irruption of Mount Ætna, having heed-

(1) "He is said," writes Dr Henderson, "to have freed his country from pestilence, by closing certain apertures in a mountain through which the Sirocco blew upon the plain."—Notes on Cabanis, p. 404. *Vide etiam* Plutarch De Curiositate, Op. tom. viii. et lib. Adversus Calotem, p. 1126. Clemens Alexandrinus, Strom. lib. vi. p. 620, Galen de Dogmat. Hippoc. et Platon. lib. iv. c. 16.

(2) Plutarch, Placit. Philosoph. lib. iv. c. 16.

(3) Sprengel is of opinion; from certain circumstances, that Alemæon was acquainted with the extension of the passage from the internal ear to the pharynx, which afterwards received the name of the Eustachian tube. (Hist. vol. i. p. 240.) Pliny attributes this discovery to Archelaus, (lib. viii. c. 50.) and Mercurialis (Variae Lectiones, lib. ii. c. 10.) is of the same opinion. For his account of the physiology of hearing, see Plutarch, Physic. Phil. Decret. lib. iv. c. 17.



lessly made too near an approach, in his eagerness to examine the nature of the molten lava.

Nearly contemporary with Pythagoras lived Heraclitus the Ephesian, a person so austere and sullen in his temper, as to give rise to the supposition that he always wept. Along with some peculiar tenets in philosophy, he entertained one or two medical opinions of his own. When seized with dropsy, he is said to have shut himself up in a stable, and covered himself over with manure, to consume, says Le Clerc, the superfluous moisture that was in his intestines ;<sup>(1)</sup> but more likely with the intention of producing a copious perspiration ; thus forestalling, as it were, the doctrine of the absorbents and exhalants. In his case, the resource proved unavailing, and he died.

The leading philosophical theory of Heraclitus was, that all the phenomena of the universe were resolvable by fire, which is the creative and preservative principle of life.<sup>(2)</sup>

Before winding up this era with Democritus, two other physicians, that seem to require a passing notice, are Acron and Herodicus ; the former reputed to be the chief of the Empirical School, as that which based medicine on experience alone ; the other the founder of the Gymnastic exercises, as applicable to the healing art.

The tradition that Acron was the originator of the empirical sect, seems chiefly to rest on the authority

(1) Histoire de la Medecine, p. 2. liv. ii. chap. vi.

(2) Diogenes, lib. ix. sect. 8, et Plutarch de El ap. p. 392.

of Pliny, as Dr Henderson remarks, in his excellent notes on Cabanis.<sup>(1)</sup>

Other historians refer its establishment to a much later period, under the auspices of Philinus of Cos.<sup>(2)</sup>

Acrone determined to be guided in his medical practice by the results of experience, contemptuously rejecting the theories and mystical doctrines of Empedocles, and other philosophic spirits of his own age. From the Asclepiades a vast treasury of facts had been handed down, and he preferred the inferences to be drawn from a comparison of symptoms, to all conjectural speculations regarding their origin. He composed on medicine and dietetics in the Doric dialect, but his works have long ago perished, and we have no exact information respecting his opinions on particular diseases.<sup>(3)</sup>

Of Herodicus, it is reported that he was of a frame naturally weak and delicate, with an inherent tendency to consumption. Having overcome this by strict attention to bodily exercise, he set about reducing his experiences into a code of precepts. He was a Thracian, educated for the healing art, and opened an academy for the instruction of youth in the gymnasium, as a means of invigorating the constitution and preserving health. We are also told

(1) *Alia factio ab experimentis se cognominans Empiricen capit in Sicilia, Acrone Agrigentino, Empedoclis physici auctoritate commendato.* Hist. Nat. lib. xxxix. c. 1.

(2) *Vid. Galeni Opera, (Ed. Charterianæ,) tom. ii. p. 363.*

(3) Acrone is said to have checked the plague at Athens by fumigations. See Plutarch de Isid. et Osir. Op. tom. vii. Paul. Ogineta De Re Medica, lib. ii. c. 24. Otli Tetrarch. Secund. S. I. C. xciv.

by Plato, that the dietetic part of medicine could hardly be said to have existed before his time.<sup>(1)</sup>

Long before Herodicus flourished there were academies in Greece for instructing the young in military and athletic exercises; and the merit claimed for him is in having been the first to direct attention to gymnastics as a curative process. After the manner of most discoverers and reformers, he carried his opinions to an absurd length, and greatly overrated the efficacy of mere bodily exercises, by supposing them capable of counteracting disease, and superseding the necessity for medicine.<sup>(2)</sup> He laid down rules for the practice of gymnastics, according to temperament and distemper, age and climate; and, in fact, introduced the art as a distinct branch of medical science.<sup>(3)</sup>

Democritus appears to have attained much greater longevity, by laughing at the follies and infirmities of man, than Heraclitus did by mourning over them; having died, according to Diogenes Laertes, when more than a hundred years old.<sup>(4)</sup>

Although the attention of Democritus was principally directed, like some of the distinguished men of whom we have spoken, not so much to medicine as an exclusive pursuit, than as a branch of general philosophy, it appears to have been an especial

(1) Plato, *Protagor.* p. 286. *Vide etiam* Lucian de *Conscrib. Hist.* p. 626.

(2) Platon. *Phædr.* in principio.

(3) Le Clerc, *Histoire de la Médecine*, Prem. Part. lib. ii. c. 8.

(4) *Vide* Diogenes Laertes, in *Democ.*, Suidas, *Clem. Alex. Strom.* lib. vi. p. 631. *Athen.* lib. ii. c. 7.

favourite with him; having left treatises on the nature of man,—on pestilential diseases,—on diet,—on prognostics,—and on the causes of sickness.<sup>(1)</sup>

While they exhibit much ingenuity and observation, the doctrines of Democritus are deeply tainted with the superstitions which prevailed in his times, as he appears to have been a firm believer in the magical properties of plants, and the cure of sickness by incantations.<sup>(2)</sup> It is said that Hippocrates had a great reverence for his genius, and lived in terms of friendship with him.<sup>(3)</sup> Of his high intellectual powers there could be no doubt; and Celsus, a good, though severe, judge of the claims of the ancient physicians, pronounces Democritus to be a person of deservedly high reputation. (“*Vir jure magni nominis*”).

The philosophy of Democritus was full of metaphysical subtleties, but in its tangible points exhibited vast ingenuity and genius. He contended that nature required only atoms and a vacuum;<sup>(4)</sup> that atoms were indivisible and unalterable; and that their qualities of sweetness, bitterness, acidity, and heat, existed only in relation to our perceptions, and were not inherent; in short, that atoms were the only realities, and their properties matters of opinion,—such properties being dependent on the man-

(1) Le Clerc, *Histoire*, Prem. Part. lib. ii. c. 6.

(2) Plinii, *Histor. Plantar.* lib. xxiv. c. 17.

(3) Hippocrat. *Opera*, tom. ii. Enfield's *History of Philosophy*, vol. i. p. 427.

(4) Aristot. *Metaphys.* lib. i. c. 4

ner in which they happened to be united.<sup>(1)</sup> This hypothesis he applied to account for all the phenomena of life and matter, whether produced by spontaneous evolutions, or the agency of external circumstances.<sup>(2)</sup>

From Democritus may be traced, we think, some of the profound speculations which have employed the learned of succeeding ages; and many of his opinions have more than a mere shadowy resemblance to theories, which have subsequently been re-modelled and maintained by Descartes, Berkley, and Dalton.

Democritus passed a cheerful old age in blindness, like Milton, and

Blind Thamyras, and Blind Meonides,  
Teresias and Phineas, prophets old.

His mode of living was so abstemiously temperate, that, according to Athenæus, he lived for some days only by smelling at honey.<sup>(3)</sup> Nature had gifted him with that happy temperament which sees only the sunny side of things. He had spent a long life of serene contemplation, in examining into the laws of nature, unravelling her intricacies, and admiring her wonders. To his well regulated mind, existence was a perpetual feast; yet he looked forward to death only as a state of repose. Cicero beautifully

(1) Diogen. Laertes, lib. ix. c. 31. p. 567.

(2) Sextus Empiricus, Pyrrh. Hyp. lib. i. c. 30.

(3) Athenæus, lib. ii. p. 46. Cicero, de Senectate, c. 7. Luc. de Longe-  
vitate, tom. ii. p. 329.

observes of him, that, in his blindness, he comforted himself with the reflection, that, if he could not discern black from white, he could yet feel the beauty of virtue and the hatefulness of vice.<sup>(1)</sup>

(1) Cic. de Natura Deorum, lib. i. c. 43. Having said so much in favour of Democritus, he it confessed, *per contra*, that he was the first champion of materialism. With regard to morals, also, he anticipated Hobbes in the dangerous doctrine, that no action is base in itself, but derives this adventitious impress from custom. Indeed the ethics of Democritus were little better than those of Epicurus, although without their grossness.

## CHAPTER V.

GENERAL OBSERVATIONS ON THE STATE OF MEDICINE  
ANTERIOR TO THE APPEARANCE OF HIPPOCRATES.

WE have now taken a view in outline of the origin and progress of medical art down to the appearance of Hippocrates, who settled its doctrines upon a more solid basis ; and shall conclude this first division of our subject with a few general observations.

Of chemistry, as a science, it is almost certain that no traces down to this era existed in the world. Of Tubal Cain, the worker in brass, and Moses and the golden calf, we have heard more than enough to convince us, that, except in a few practical details, it is comparatively modern. Alchemy, it is true, is ancient enough ; and that the power of many superior minds has been wasted in the vain attempt of transmuting the baser metals into gold, is a truth whose illustration extends back into the hoar antiquity of the days of Hermes Trismegistus.<sup>(1)</sup>

(1) Jamblicus de Myster. *Ægypt.* lib. viii. c. 4. Galen de Facultat. Simplic. Medic. lib. vi. p. 68.

Of surgery, although in all likelihood it was that branch of the healing art which first attracted attention, it appears that little more was known than the binding of open wounds, the stanching of bleeding surfaces by styptics or the cantery, and phlebotomy. As early as the siege of Troy, or rather the days of Homer, wounds were washed with wine, and dressed with salves; and, in the extraction of barbed arrows and darts from the flesh, free use was made of incision.<sup>(1)</sup>

Whether we admit or reject the assertion, that bloodletting was practised by Podalirius, it is a matter of certainty, that, when Hippocrates wrote, the remedy was one in universal use, and had been also tried locally in a variety of affections. It was quite customary to open the veins of the arms, feet, forehead, nose, and tongue; and cupping, with scarifications, was also used.<sup>(2)</sup>

Of the capital operations we have no certain account. Indeed the obstacles standing in the way of anatomical investigation, must have effectually impeded the progress which surgery could not have otherwise failed to have made, and rendered any extensive division of the soft parts extremely hazardous and uncertain.

All accurate medical knowledge being founded on anatomy, it follows, as a necessary conclusion, that a

(1) Le Clerc, *Histoire de la Medecine*, Prem. Part. liv. ii. c. 9. Homer mentions the poppy, (*Iliad*, vii. ver. 306.) Opium itself was not unknown, as record is made of it in the episode of Helen and Polydamna.

(2) Hippocrates de *Prisca Medicina*, *passim*. Sprengel, *Medecine des Anciens Grecs*, *Histoire*, vol. i. sec. 2. c. 4.



great proportion of the facts, which were treasured up by the Asclepiades, and handed down as the results of their experience, must have been grounded on empiricism and error, and could not be rendered available in the guidance of future practitioners. To prescribe medicines on scientific principles, it was necessary to be conversant with the physiology of the human frame; and, without a previous acquaintance with the structure of its parts, that never could be arrived at. - Chance, no doubt, might lead to the discovery of many valuable and important facts; and, from the results of a number of similar cases, general inferences might be drawn. With this the matter must have stopped.

We thus see, that the difficulties in the way of knowledge were great. Instruction could only be obtained from oral communication, or from the sentences noted down in the temples, as the principles of the art. The former was, of course, the result of mere personal experience, coloured by individual vanity and prejudice; and the latter did not correspond in any two shrines, where medicine was practised. In the school of Cnidus, it was the custom carefully to note down the symptoms of every distemper; but the teachers troubled themselves no farther, trusting to dietetics and a few simple medicines, chiefly purgatives, the principal of which was the claterium, or wild cucumber juice. It hence derived the appellation of the Empirical School, in opposition to that of Cos, where the art was treated on more philosophical principles, diseases being tra-

ced to their proximate causes, and remedies sought for from their operations on the functions of the animal machine.

Although a vast mass of materials, relating to the healing art, had thus, age after age, been accumulating, still there was nothing like system, and every one acted on the suggestions of fancy or experience. Such a state of things could only induce chaos and contradiction. Effects were alone discernible ; causes were disregarded. It was not, therefore, so much by what Pythagoras and his disciples added to the known facts of medicine, that they were benefactors to mankind, as by their powerful and Titanic efforts to raise it to the dignity of a science. When the world around was mantled in the night of idolatry and superstition, it was not to be expected from mere humanity, that they themselves were at once to rise over the shadows into the sunlight of truth. They had been educated in mysticism and error, and the soiling influence still adhered to them. But to them we owe the first dawns of that discernment, which penetrated into the hidden springs of disease : and from medicine being a bare accumulation of facts, as voluminous as unsatisfactory, it began to assume the aspect of a science. Formerly it had been a collection of arcana, religiously shut up among the priests, as a subject of exclusive property ; but philosophy brought it forth for general investigation. speculated from effects as to their causes, and drew inferences, sometimes indeed unsatisfactory, but always ingenious. Ignorant of anatomy and physiolo-

gy, their great error lay in reasoning abstractedly on the nature of mere matter, as if the human frame was not a most complicated machine, the perfect harmony of all whose functions was necessary for health. Pythagoras solved difficulties by reference to the doctrine of critical days, and the influence of numbers—Heraclitus by reference to his four elements—Democritus to his atoms.<sup>(1)</sup> Each had his hypothesis, according to which phenomena were to be reconciled; nor is it much to be wondered at, if, when they could not find, they fancied.

(1) The reader, who is anxious to obtain a more explicit and detailed account of the opinions and doctrines entertained and disseminated by the ancient philosophers of Greece, will find such in Brucker's *Historia Critica Philosophiæ*, vols. i. and ii.; as also, in a more succinct form, in Enfield's *History of Philosophy*, which is a judicious condensation of that voluminous work. See "Of the Ionic and of the Italic Schools," vol. i.



## SECTION SECOND.

## CHAPTER I.

## LIFE AND TIMES OF HIPPOCRATES—HIS PHILOSOPHICAL DOCTRINES, AND MEDICAL WRITINGS.

PASSING over a variety of minor circumstances, we now come to that greatest era in the history of ancient medicine—the appearance of HIPPOCRATES, whose birth, according to Soranus, took place in the eightieth Olympiad, although other authorities make it somewhat earlier.<sup>(1)</sup> Notwithstanding all that has been said in the preceding chapters, Hippocrates has a strong claim to be considered as the Father of Physic. He found it a chaos of undigested observations, and left it in the shape of a science. For medicine and surgery he did far more than all who had gone before him put together; and, we scarcely hesitate to add, as much as any individual who has come after him.

(1) Soran. in Vita Hipp. Op. vol. ii. chap. i. Eusebius says, that Hippocrates flourished in the 86th Olympiad; and Aulus Gellius, that he was a contemporary of the tragic poets Sophocles and Euripides.—See the subject discussed in Le Clerc's *Histoire*, Prem. Part. liv. ii. c. xxxi.

This truly great man was son of Heraclides and Praxithea, and was born in the Island of Cos. If we may credit the genealogies of the Asclepiades, he was the seventeenth in descent from Esculapius on the father's side, and the twentieth from Hercules on the mother's. It is more certain, that his father and grandfather were both physicians of eminence; and that from them he imbibed a taste for science, and some medical knowledge. His studies were afterwards prosecuted under Herodicus, of whom we have already spoken, as well as under his brother Georgias, the Sophist, of Leontium.

The genius and judgment of Hippocrates alike fitted and taught him to make the best use of his early advantages. From the philosophers his immediate predecessors and contemporaries, with whose fame the world rang, and whose doctrines formed a new chapter in the history of the human mind, he learned the various theories which were made to account for the phenomena of the universe. Some have averred that he studied physics immediately under the tuition of Democritus; but this is extremely doubtful, and it is not likely that he even ever saw that philosopher till a far later period of his life.

At the time when Hippocrates commenced his studies, the doctrines of Heraclitus and Pythagoras divided the philosophical world, and produced a revolution in the different schools of medicine; but his more accurate perception of the fitness of things

taught him, that the practice of the healing art must be based, not on speculations, but on the results of observation and experience, guided by philosophical theory.<sup>(1)</sup> Hence he was considered in after times as the founder of the Dogmatic sect, in contradistinction to the Empirical practitioners, of whom we have already spoken.

Nature and circumstances appear alike to have combined to form Hippocrates a great physician. Being a person of bold and penetrating genius, he soon, in a great measure, freed medicine from the absurdities which ignorance and superstition had heaped around it; and, through a long and glorious life, he set a splendid example to mankind of persevering industry, philosophical research, and high moral worth. Indeed, every thing considered, he may be set down with Homer, Bacon, Newton, Shakspeare, and Scott, as one of the master-minds of the world.

According to the custom of the ancient philosophers, Hippocrates sought to improve his mind as well by travel as by study. He appears to have visited almost the whole of Greece, together with the islands of the Archipelago. Some parts of his writings would almost induce us to believe that he had extended his route as far northward as the countries inhabited by the wandering Scythians.

(1) *Primos Hippocrates medendi præcepta clarissime condidit. Plin. lib. xxvi. cap. 2.*

The greater part of his life, however, appears to have been spent in Thessaly and Thrace.<sup>(1)</sup>

In following out the personal history of this admirable person, it is gratifying to find, that, bad as the world is, high moral excellence will at all times command its respect. Meagre as are the details handed down to us regarding the biography of Hippocrates, these are so mixed up with fable, that little more is to be relied on than the universal praise which his character received,—and which, from the tone of his perfectly accredited writings, we can at once see was fully deserved.

On the biographical account given by Soranus, and from which all the others are in a great measure drawn, it is unfortunate that little reliance can be placed. Every one has heard of his having discovered love to have been the consumption which was silently destroying the son of Perdiccas, king of Macedon;<sup>(2)</sup> and of his having refused the most splendid bribes from Artaxerxes of Persia to reside at that court. No less apocryphal is the story of the respect paid to him as an individual; having averted a threatened invasion of Cos by the Athe-

(1) Tzetzes, *Chil. viii. Histor.* 155. p. 133. Ed. Basil. 1546. Consult per contra Stephan. Byzant. *voca* *Ἰδωνοῖ*, p. 378.

“On peut,” says Sprengel, “conjecturer également qu’il a voyagé dans la Scythie et dans le pays qui avoisine le royaume de Pont et les Palus Méotides, parce qu’il donne un tableau très-fidèle des mœurs et de la manière de vivre des Scythes.”—*Histoire*, vol. i. p. 288.

(2) There is every reason to doubt this circumstance. Let the reader compare the account of Soranus, with Thucydides, lib. ii. cap. 39, and Eusebius, *Chron.* lib. i. p. 53.



nians. These delightful traditions speak at once of the lofty character which Hippocrates sustained among the nations, since they could for so many ages be believed concerning him ; but unfortunately, with many other things which rest on the dubious authority of his letters, they do not well bear the scrutiny of the learned. He is said to have been presented with a golden crown for his services during the great plague of Athens ; yet, in an admirable note on Cabanis, Dr Henderson has well shewn, that the silence of Thucydides on the subject more than counterbalances the authority given to it by Galen and Soranus.<sup>(1)</sup> Dr Ackermann and M. Le Clerc are also both sceptical on the subject, after a minute examination of the probabilities for and against.<sup>(2)</sup> The former, indeed, conjectures, with every appearance of truth, that almost the whole of the stories related concerning Hippocrates were manufactured, long after his death, by the followers of the Dogmatic Sect, who, regarding him as their founder, did not scruple to attempt the embellishment of his memory by a few splendid fictions. Thus much is certain, that Hippocrates was a good man ; all authorities agreeing on the point. That he was a great man, we shall attempt to shew, by a necessarily rapid glance at his writings, from which it will be seen, that his merits are more than enough

(1) Henderson's Notes on Cabanis' Medical Science, p. 407.

(2) Le Clerc, *Histoire de la Médecine*, p. 245.—Fabricius, *Bibliotheca Græca*, tome ii. p. 512.—Ackermann in *Vita Hippocratis*.

to speak for themselves, without the bolstering traditions of Ælianus and Diogenes Laërtius.

The fame of Hippocrates soon raised the reputation of the Coan School far above that of its rivals, and for a long time it retained that pre-eminence. He made a distinction between the speculative opinions of the philosophers and the ideas which ought to regulate the practice of the physician, by shewing that the former comprehended, under general rules, all the phenomena of nature, which were governed by fixed laws; but that the human body was an animated machine, to which these were inapplicable; that its states were continually varying between repletion and exhaustion, health and disease; and that it required a vigilant attention and matured experience to note the changes of the system, as well as their nature and management. In other words, he pointed out the fact, that, so far as the Healing Art is concerned, systematizing is not always philosophizing; and that, though every physician required to be something of a philosopher, it did not follow that every philosopher was a physician.

Of the exact philosophic notions entertained by Hippocrates it is difficult to speak, as several of the treatises bearing his name can be proved to be spurious, and others to have been interpolated,—sufficient reasons for the fact, that the theories found in different parts of his works are not always in accordance.<sup>(1)</sup>

(1) This seeming discrepancy in the philosophical notions of Hippocrates has afforded a delightful bone of contention for the knawing of the learned.

He appears to acknowledge a mighty power or general principle, which he denominates Nature, and to whose operation he attributes not only the ability of the animal economy to perform its functions, but also of restoring its lost balance in states of disease. It is by this principle, according to him, that all things are increased, modified, nourished, and preserved; and that they have the power of attracting, retaining, and assimilating what is proper, as well as of rejecting whatever is noxious or disagreeable. In fact, with some slight modifications, this doctrine is substantially the same with that taught of late years by the celebrated Dr Cullen.<sup>(1)</sup>

It was an opinion of Hippocrates that the arteries contained more heat than the veins, and were the receptacles of the animal spirits; and in several of his treatises there are passages, that somewhat less than obscurely seem to point out a belief in the circulation of the blood, although the discovery of the

—See Galen. de Nat. Facultat. lib. i. Le Clerc, Histoire, p. i. lib. iii. c. 2. Fab. Biblioth. Græc. vol. xii. p. 675,—With particular respect to his theological opinions, see J. Stephen. Hipp. Theolog. Venet. 1633. Schmidii Diss. de Theol. Hipp.—Treller. in Hipp. falso Atheismi accus.—Gesner, Diss. de  $\Psi\upsilon\chi\alpha\iota\varsigma$ , Hippoc.—Gruter, Hist. Philosophiæ, abridged by Enfield, vol. i. 444-5.

(1) De Natur. Human, *passim*. There are some doubts as to Hippocrates being the author of this treatise; Galen regards him as such in various places throughout his works. Vide Comm. l. in Lib. de Nat. Human. p. 4. De Element. Sec. Hip. lib. i. p. 49.—De Nat. Facultat. lib. i. p. 87.—Be this as it may,—and Draco, Thessalus, and Polyblus, have each been mentioned as the writers—whoever composed the treatise on the Nature of Man, is the first who introduced into physiology the doctrine of the elements, fire, air, earth, and water,—and consequently the founder also of the humoral pathology; Sprengel himself confessing (Histoire, tome i. p. 300), that Plato is only a commentator on the ideas therein summarily developed.

method by which that is carried on, was reserved for far after ages. He speaks of it as a fluid in motion, and supposes all the veins to be branches of a great one, which has neither beginning nor end, but describes a circle. In another part of his writings, he says that all the humours return by a reflux motion to the centre of the body; and accounts for pulsation, by supposing two contrary currents of blood to come violently into contact, throbbing being produced from the commotion thus excited.<sup>(1)</sup>

Of the nervous system, his account is a strange blending of ingenuity and error. His description of the spinal nerves is not very inaccurate; but although he mentions three varieties of substance, which he describes as nerves, tendons, and ligaments, he frequently jumbles them all together, and considers them as of the same nature. That such is the case, is evident from his defining nerves to be the engines which serve to bend, to contract, and to extend the members.<sup>(2)</sup>

The description which Hippocrates has given of the organs of sense is highly curious. Of the anatomy and physiology of the ear, we have a tolerably

(1) Vide *passim* Lib. de Carnibus, where Hippocrates says, that "all veins come from the liver, as the arteries from the heart;"—Lib. de Alimentis, wherein he distinguishes between the aorta and the vena cava,—and for some singular opinions regarding the distribution of the Venous System, the reader is referred to the treatises De Ossium Natura and De Natura Humana.

(2) Lib. de Ossium Natura. Le Clerc, in the examination of this subject, has, with much industry, brought together a number of passages from different parts of the writings of Hippocrates, clearly demonstrating that he indiscriminately blended together nerves, tendons, and ligaments. Histoire, part i. liv. 3.

well defined and accurate notion from what he has laid down ;<sup>(1)</sup> but the same cannot be said of smell, which he believed to proceed from the brain descending into the cavity of the nose ; and that being a moist body, it had the power of drawing in odour from dry substances.<sup>(2)</sup> Vision he accounted for as the reflection of bodies in a transparent fluid, which is a subtle humour, distilled from the brain through some extremely fine veins in the back part of the eye, which operate as strainers.

He supposed digestion to proceed from a concoction of aliment occasioned by the heat of the stomach.<sup>(3)</sup> That viscus itself he describes as a highly nervous part, connected with the concave side of the liver.

He describes the liver as having five lobes ; that several tubes pass between it and the heart, together with the great vein on which the nourishment of the whole body depends ; and that its office is the separation of the bile, which it accomplishes through the medium of these veins. The spleen he considered a fibrous substance, but spongy, which imbibed part of the fluids swallowed ; the rest going more immediately to the kidneys, which he describes as glandular bodies. Of the intestines he acknowledged only two divisions, the colon and rectum.

(1) Lib. de Carn. De Princip. 121. De Locis in Hom. p. 365.

(2) Indeed, it may be remarked, that this account of the physiology of smell is substantially the same as those of Empedocles and Alcmeon.

(3) Lib. de Anatomia. Hippocrates, in this treatise, terms the stomach *καλὴ σπητικὴ*. See also Lib. de Alimentis, where we find the words *πέψις*, *concoction*, and *πέτσειν*, *to concoct*.

In his speculation on the conception and growth of the foetus, there is a great deal of ingenuity mixed up with whim.<sup>(1)</sup> He holds that males come from the right side of the womb, females from the left; and that children born in the eighth month are much less likely to live than those born in the seventh. The truth of this latter remark, the experience of ages has gone far to substantiate.<sup>(2)</sup>

In the treatise on the glands attributed to our author, the brain is reckoned among the number. He curiously supposes the head to act like a cupping-glass, in draining the moisture from the other parts of the body, and again issuing it forth as required by the glands.<sup>(3)</sup> Like all other physiologists who have speculated on the subject, Hippocrates seems at a loss how to dispose of the soul. When treating of the heart, he places it in the left ventricle; yet says, in another place, that the brain is the seat of the understanding.<sup>(4)</sup>

Hippocrates considers heat as an indestructible essence, and in this his philosophy assimilates with that of Heraclitus, who made it the soul of the creation.<sup>(5)</sup> Sometimes he writes of it as almost

(1) De Natur. Pner. De Carnib.

(2) De Partu Septimes; et Epidem. lib. II. sect. 6. It is curious, as Le Clerc remarks, that the observations of Hippocrates on birth in the seventh month, should have afforded a rule and standard for all the Roman laws relating to this subject. Paulus Aegineta says, with reference to this subject, "*Septimo mense nasci perfectum partum receptum est propter auctoritatem doctissimi viri Hippocratis.*" Lib. vii. de Statu Hominum.

(3) Lib. de Gland. It must be remarked that Galen considers this book as spurious.

(4) Lib. de Morbo Sacro. De Corde. De locis in Homine.

(5) Hipp. Aphorism, l. xiv. De Principiis, p. 112. The principle of life.



synonymous with his principle of nature. His suppositions and speculations regarding the probable formation of the various component parts of the human body are more ingenious than solid, and seem to have been indulged in by him, merely from their being in accordance with his theories regarding the creation of air, water, and earth, which he sets down as having been produced by the operation of heat on chaos.<sup>(1)</sup>

In the management of diseases, Hippocrates trusted a great deal to nature, as he believed that each had its course, which must be gone through; and hence, his practice has been censured for lack of energy.<sup>(2)</sup> Regarding disease as only a process, by which something deleterious was removed from the system, his principal effort was in assisting nature to accomplish that purpose. He believed that contraries cured contraries,—that heat was to be overcome by cold,—repletion by evacuation. In the early stages of idiopathic fevers, he trusted principally to abstinence from nourishing substances, and to the use of diluting drinks.<sup>(3)</sup> Towards their crisis, and during their cure, he used laxatives and nauseat-

however, admitted by Hippocrates, is not quite the same as that of Pythagoras, Heraclitus, and Plato. They acknowledged fire to be so; he sought it in that principle of heat, which he set down as the essence of fire.

(1) Galen (*De Dogmat. Hipp. et Plat. lib. viii.*) identifies his opinions with those of Hippocrates, by insisting on the distinction between elementary qualities and the elements themselves, in opposition to the philosophy of Empedocles, which supposes that all the elements exist in the body in their veritable state.

(2) Asclepiades, in particular, reproaches him on this head. *Vide Galen de Venæ sect. adv. Erasistr. p. 3.*

(3) *De Ratione Vict. in Acut. passim.*

ing medicines. In inflammations he adopted a bolder practice, and made free use of the lancet.<sup>(1)</sup>

As a delineator and faithful chronicler of diseases, Hippocrates is worthy of the highest admiration. He was an acute and accurate observer of symptoms, and hence deeply skilled in their diagnostic and prognostic signs. However different be now our anatomical knowledge, and our physiological belief, so minute and accurate are many of the descriptions given by this great physician, that they might almost be set down in our nosologies as pointing out particular varieties of disease. It was hence, that in ancient times Hippocrates derived a great part of his fame; as Sydenham did in an age more recent. By an accurate attention to symptoms, he was not only taught to discriminate one disease from another, but was prophetic in telling its probable result. Indeed, it is well remarked by Celsus, that he was so distinguished for his ingenuity in prognosis, that he left little to be learned on the subject by posterity.<sup>(2)</sup> The book of Aphorisms in this point of view alone, will ever remain a monument of his judgment and his genius.

Every thing considered, the physiology or doctrine of the functions of the animal economy, as laid down by Hippocrates, is full of ingenuity and beauty,

(1) De Morb. lib. iii. De Ratione Vict. in Acut. where bloodletting is recommended in cases of violent pain, and more especially in inflammations. De Epidem. lib. vi. sect. 6. He here advises the blood in particular cases to be drawn as near as possible from the part affected, &c. &c.

(2) "Recentiores quoque Medici, quamvis in curationibus mutarint, tamen hæc Hippocratem optime præagisse fatentur. Lib. ii. præfat.



although marred by crudities, in a great measure arising from insufficient acquaintance with anatomical structure.

He divides the body into containing and contained parts; the former the bones, nerves, cartilages, muscles, membranes, &c.; the latter the blood, the phlegm, the yellow bile and the black.

Blood, he believed to be the source of vital heat, and the nourisher of the frame; phlegm, the lubricator of the various membranes and articulations; the yellow bile, the preserver of the body in its healthy state, more especially by assisting in the concoction of aliment, and by keeping the intestinal canal free and open; and the black, the nucleus or foundation for the other humours.<sup>(1)</sup>

To these humours he ascribed four qualities,—moisture, dryness, heat, and cold; and compares them to the four ages of man, to the four seasons of the year, and to the climates. Infancy he considers as typical of spring and temperate climates, in being more subject to diseases arising from increased quantity of blood; youth, as analogous to summer and countries whose temperature is hot and dry, he set down as more subject to overflow of bile; middle age, or the autumn of life, to melancholic distempers; and old age, or its winter, to affections arising from increased action of the mucons membranes.

Hippocrates divided febrile disease into four stages,—the commencement, the increase, the acme,

(1) Lib. de Affectionibus; et Lib. i. De Morbis.

and the decline,<sup>(1)</sup> giving the term crisis to any sudden yet settled mutation either to the better or worse. According to him, this crisis may take place in diseases of extreme violence so early as the fourth day; in acute ones, it happens on the seventh, eleventh, or fourteenth.<sup>(2)</sup> Diseases extending beyond sixty days, are ranged under the general appellation of chronic, and are determined either by the solstice or equinox.<sup>(3)</sup>

It is worthy of remark, that he was not unacquainted with the doctrine of Metastasis; as he distinctly says, that a disease may change its type and character, by putting on the symptoms of another. It is, therefore, not a little astonishing, that such an admirable observer should have so much overlooked the state of the pulse, as one of the most certain signs of recovery. Such, however, was the case; for although he judges of the exacerbations of fever from oppressed respiration and heat of the skin, he makes no allusion to its fulness or frequency.<sup>(4)</sup>

From the number of simples mentioned in the writings of Hippocrates, and the description given of their peculiar qualities, it is evident that before

(1) Ἀρχή, — ἐπίδοσις, — ἀκμῆ, — χαλασις. Of course the fourth only occurs in diseases whose termination is favourable; when otherwise, death is the substitute.

(2) Aphor. xxiii. sect. 2. Lib. de Crisibus.

(3) De Diebus Criticis. Aphorism. xxviii. sect. 3.

(4) Gal. de Differ. et Gener. Puls. Theophil. Protospathar. Lib. de Urin. et Puls. That Hippocrates, however, occasionally drew inferences from the state of the pulse, is evident, from passages both in books 4th and 6th of the Epidemics. In the former, he tells us that acute fever is indicated by a strong and rapid pulse; and, in the latter, that a person whose artery beats at the elbow, is either in a great rage, or about to grow mad.

and at his time, considerable attention had been paid to pharmacy. These were employed for their emetic, diaphoretic, or laxative effect principally; and were used externally as moist, dry, or vapour fomentations, fumigations, gargles, collyria, cataplasms, oils, unguents, and cerates.<sup>(1)</sup>

Nor was the attention of Hippocrates confined alone to the alleviation or cure of internal diseases; in his zeal for the furtherance of surgery, he also outstripped all his predecessors. It is said to have been a maxim with him, that, "when medicine failed, recourse should be had to the knife, and, when the knife was unsuccessful, to fire."

The cantery appears to have been a favourite mode of cure with him, as he made no hesitation of using it in a variety of complaints, and in a variety of forms. His principal mode was by applying hot iron rods to the part. In other cases he preferred a spindle of box-tree immediately taken from submersion in boiling oil; or he burned flax over the affected part, nearly in the manner that Prosper Alpinus describes as common among the Egyptians, or as the Indians use their moxa.<sup>(2)</sup> He also had recourse to tents and issues, on the principle of extraneous substances inducing and keeping up supuration.

(1) *Vide passim* De Ratione Victus in Acutis. De Morbis. Galen de Simpl. Medicam. Facultat. lib. ii. in glossis Hippocratis.

(2) In cases of gout and scatica, Hippocrates burned the parts with *Linum crudum*,—a practice which Sydenham compares to that of the Indians with their moxa. The word *ῥιζόλιον* has afforded much speculation among lexicographers. See the sixth book of the *Varie Lectiones* of Mercurialis, ch. 2. Athenæus, lib. ix. Eustathius in *Odyss.* lib. v. The Egyp-

Hippocrates has been blamed, as already remarked, for inactivity in his medical practice, but perhaps injudiciously; for, allowing such to have been the case, it evidently proceeded from his philosophical opinions regarding the nature of disease, and not from constitutional causes; as in surgery he was eminently bold and decided, performing all kinds of operations with his own hand, except that of lithotomy; the practice of which was in his day confined to a few, who made it their exclusive study.<sup>(1)</sup> He reduced dislocations and set fractures, extracted the fœtus with the forceps, and used the trepan not only in depression of the cranium, but also in cases of severe headache. Even in cases of hydrothorax and empyema, he was not deterred from the risks of operation. After ascertaining by percussion, that fluid was present in the cavity of the chest, he made an incision between the ribs, allowed part of the matter or lymph to escape, and then introduced a tent, which he withdrew regularly once a day, till the whole was evacuated. Modern hardihood, assisted by all the lights of anatomy, has scarcely gone beyond this practice.<sup>(2)</sup>

Indeed, the more we regard the philosophical, medical, and surgical writings of Hippocrates, the

tian method was by rolling a little cotton on a piece of linen, in the form of a pyramid, and setting fire to the apex, while the basis was held against the part to be cauterized. See Prosper Alpinus, *de Medicin. Egypt. lib. iii. cap. 12.*

(1) *Epidem. lib. vii. p. 1238.*

(2) *De Chronicis. De Affectionibus. De Intern. Affectionibus. De Vic-tus ratione in Acutis. De Articulationibus. De Fracturis. De Epidemiciis, lib. vii. passim.*

more will we find cause for admiration and astonishment. In his maxims and advices, we find shadowed out by far the greater portion of the useful theories and modes of practice, which have obtained in succeeding ages; and that, even in our own day, form the accredited foundations of the healing art. Nothing seemed to escape his attention. He observed that even minute wounds of tendinous parts, such as the fingers or toes, occasionally produce convulsions that terminate fatally;<sup>(1)</sup> and that black spots on the feet frequently increase to extensive gangrenes and incurable mortifications.<sup>(2)</sup> His applying his ear to the chest, and using percussion, to ascertain from sounds the presence or absence of fluid, is exactly on the principle that the stethoscope is now used; and his burning flax or dried mushrooms on the skin, is merely another mode of the moxa.<sup>(3)</sup>

The account which we have here given of the anatomical, physiological, and medical opinions of Hippocrates, is deduced from the writings, which the learning and research of Anutius Foësius, and Ackermann have ascertained to be his; with only occasional reference to the treatises which are now known to have either been written by others of the same name, or by people who wished his authority for their doctrines. For this reason, it may not ap-

(1) De Epidemicis, lib. vii.

(2) De Epidemicis, lib. i.

(3) The saying of Job, that "nothing is new under the sun," is verified in the fact, that whatever may be thought of the practice of the notorious St John Long, the principal features of his practice may be derived from the pages of Hippocrates, who recommends the production of eschars on the back and breast, in the earlier stages of pulmonary disease.

pear so full and satisfactory as that which others have chosen to draw up, from references to the whole. Our object has been to give an outline of what was known to Hippocrates, and taught by him; and not what others have endeavoured to foist on the world under his great name.

If we discard the traditions of *Ælian* and others,<sup>(1)</sup> we have nothing to add to the scanty fragments already given of the personal history of Hippocrates, save that he died at Larissa in Thessaly, and was buried between that city and Gyrtona, where the site of his sepulchre is still shewn. That he attained extreme old age is certain; but chroniclers have differed widely as to the exact duration of his life, some making it extend to only eighty-five years, others to one hundred and nine. The best accredited accounts set down his death about ninety.

It would be superfluous to bring together all the eulogiums which antiquity has poured forth over the grave of this truly great person. By almost universal consent he was set down as the prince of physicians; and his opinions were respected as oracular. So splendidly did he exemplify the spirit of true philosophy in his works, that Plato regarded him as a master, and Aristotle followed his style as the best of all models. Both Galen and Celsus—next to himself, the most eminent medical authorities of the ancient world—commented upon his writings. Seneca pronounces him the greatest of physicians, and Pliny, the father of all physic; while Macrobius, to

(1) *Ælian*, Var. Hist. lib. iv. c. 20. p. 290-3.



outdo the rest, affirms, that he could neither deceive another, nor be deceived himself.<sup>(1)</sup>

Regarding the writings of Hippocrates, Galen says, that they bear with them an authority almost more than human; and that, if occasionally passages are obscure from excess of brevity, what is delivered is always applicable to the purpose; in other words, that his errors may be those of omission, but seldom, if ever, of commission: and Suidas adds, that such is the reverence paid to the great physician of Cos, by all who make the healing art their study, that his precepts are believed by many to have come from a divine mouth, and not a human. To barely give a chronological list of his commentators would be a task; being, like those of Shakspeare, "as the sands of the sea for number." Taken all in all, we reckon the most complete edition of the works of Hippocrates, that given by Renatus Chartier, and published in folio, along with the writings of Galen, Paris, 1679.<sup>(2)</sup> The best and most accurate dissertation on his life and writings is that by Dr Ackermann in the *Bibliotheca Græca* of Fabricius.<sup>(3)</sup>

(1) Le Clerc, with his accustomed learning and industry, has brought together a variety of laudations conferred upon Hippocrates by the ancient writers. See *Histoire de la Medecine*, prem. part. liv. iii. cap. 32.

(2) *Magni Hippocratis Coli, et Claudii Galenii Pergameni Archiatron, Universa quæ extant opera*; Renatus Charterius, Vindocensis, Doctor, Med. Paris. Regis Christianissimi Cons. Med. ac Professor Ordinarius, plurima interpretatus, universa emendavit, instauravit, notavit, auxit, secundum distinctas Medicinæ partes, in tredecim tomos digessit, conjunctim Græce et Latine primus edidit, adstruxit et medicam synopsis rerum his in operibus contentarum in dem. Lutetiae Parisiorum 1639, In fol. xlv. vol.

This most elaborate edition contains the Life by Soranus, and Erotian's Dictionary of the obscure words and terms used by Hippocrates in his treatises.

(3) Fabricius, *Bibliotheca Græca*, vol. ii. Ackermann in *Vita Hippocrates.*

Sprengel, in his historical work on medicine, accounts for the style of Hippocrates being concise, even to obscurity, on the whimsical ground of paper being a rare article in his time among the Greeks; recourse being generally had to prepared skins of animals, or to tablets of wax.<sup>(1)</sup> For though he admits that the Greek colonists of Egypt were not unacquainted with the papyrus, and its mode of preparation, even as early as the reign of Amasis, yet he contends that it was not in common use among them, even in the days of Alexander the Great.<sup>(2)</sup>

Another equally doubtful apology has been set up for the sententious brevity of the style of Hippocrates, in the surmise, that some of them were intended solely for his own private use, and not for public inspection. Galen affirms that his sons Thesalus and Draco, together with his son-in-law Polybius, interpolated his writings after his death, and perverted their arrangement, for the purpose of adapting them to the doctrines of the sect they had embraced;<sup>(3)</sup> that they added much of their own, and eked out obscure passages, in order to render them more explicit. In short, that they did for him, what others appear to have done for the poetry of Homer.

The field of discussion would be boundless, were we to enter upon an examination of what has been written for and against the authenticity of the various

(1) *Histoire de la Médecine*, tome i. p. 291.

(2) Varro, as quoted by Pliny, *Hist. Natur.* lib. xiii. c. 2.

(3) Galen, *Comment.* 1. in *Lib. de Nat. Hum.* p. 2., et *Comm.* 3. in *lib. vi. Epidem.* p. 483.



treatises which have been fathered on Hippocrates. Suffice it to say, that, out of the seventy-two books which bear his name, sixty-five are dubious in their origin. Those recognised as undoubtedly genuine, are, the Epidemics, books first and third—the Predictions, books first and second—the Prognostics—the Aphorisms—on Diet in Acute Diseases—on Wounds of the Head—and on Air, Waters, and Soils. After a severe scrutiny, these are acknowledged by Dr Ackermann as the works of our author; although they may not be altogether free from interpolations, and from such changes of arrangement, as transcribers or annotators may have ignorantly or wilfully made.

All the Letters, which bear the name of Hippocrates, are now believed to be fictitious. Roland has shewn, that the one, said to be that from the Abderites, inviting him to visit Democritus, is the composition of Epictetus; and Joseph Scaliger, in a letter to Vorstius, dismisses the subject with the remark, that “although these epistles are undoubtedly ancient, yet that they were not written by him.”<sup>(1)</sup>

From this sweeping sentence Cabanis would fain exclude the epistle of Democritus, and the answer of Hippocrates, which is characterized by that tender melancholy in its sentiments, which seems almost an

(1) De Epistolis Hippocratis quod ex me quaris, antiquas esse scio, ut Democriti, Solonis, Pittaci Mitilenæi, quæ apud Laertium leguntur. Sed quia omnes illas, quæ illis philosophia Laertio attribuntur multis argumentis confictas a Græcis, quibus nunquam mentiendi voluntas aut facultas fuit, probare possum; ideo cur et de his Hippocratis dubitam justissima causa est.—Joseph Scaliger, Epist. cccvi.

inherent part of the constitution of high and fine genius.<sup>(1)</sup> In it he is made to complain of

“ The unwilling gratitude of base mankind,”

and that his professional exertions and fatigues were far more frequently repaid with blame for misconduct, than praise for success ; moreover, that he was then an old man, and was yet far from having carried his art to that point of perfection of which it was susceptible.

So little impressed did this great physician seem with a sense of his own merits, that, in a part of his writings referring to himself, he declares, that “ the practitioner of medicine who commits the fewest faults, is the most to be admired.”<sup>(2)</sup>

But although so humble was Hippocrates in his self-estimation, the world admired his genius ; and his country, grateful for the benefits and honours he had conferred on her, rang with his renown. The inhabitants of Argos voted him a statue of gold ; and he was more than once crowned by the Athenians, and initiated into the most sacred mysteries of their religion,—a distinction the highest they could confer, as one scarcely ever permitted to strangers. After his death, universal and almost divine honours were paid to his memory. Mankind recognised his eminent personal services ; and by his writings he

(1) Science Medicale.

(2) In reference to the same honest exposition of sentiment and conduct, Quintilian says—“ Nam et Hippocrates clarus arte medicinæ videtur honestissime fecisse, qui quosdam errores suos, ne posterî errarent, confessus est.”  
—Institut.

had made all posterity his debtor. Temples were erected to him, and his altars covered with offerings.<sup>(1)</sup>

All these things could not have happened, had not Hippocrates united in his person the highest moral as well as intellectual greatness. It is delightful to linger over the history of a lofty genius, distinguished alike for the purity of his religious sentiments, and of his moral conduct; and such was the physician of Cos. In short, as M. Cabanis very beautifully says, "continuing to be studied by physicians, to be consulted by philosophers, and read by all men of taste, he is and always will be universally respected as one of the most distinguished ornaments of antiquity; and his works will always be regarded as one of the most valuable monuments of science."<sup>(2)</sup>

It may be thought necessary, in concluding this chapter, to advert to the language in which the works of Hippocrates are written, and which has been a strong bone of contention among his commentators from age to age. From his not being always understood by Capito and Dioscorides, who were native Greeks; and from Erotian, who lived in the reign of Nero, having, even at that time, given a glossary of his obsolete or obscure words, it is pretty evident,

(1) It is pleasant to hear the opinions of antiquity echoed back by modern times. It gives us some assurance of the nature of good and evil, and their eternal distinction. "La plus riche vie que se sache avoir été regue entre les vivans, et étoffée des plus riches parties et desirables, c'est celle d'Hippocrates; et d'un autre cote, je ne connois aucuns écrits d'homme que je regarde avec autant d'honneur et d'amour."—Montaigne.

For an excellent account of the Chirurgical merits of Hippocrates, the reader is referred to the article *Chirurgie*, in the French Encyclopédie, written by the celebrated M. Louis.

(2) *Revolutions de Science Medicale*.

that the circumstance originates in the fact of the Greek language having not yet acquired stability. Indeed, it is not much to be wondered at, if, in the lapse of four hundred years, there should have been considerable change in that tongue; there being that distance between Hippocrates and the earliest of his commentators.<sup>(1)</sup>

The language of Cos being the Doric, it has been matter of surprise, that Hippocrates wrote in the Ionian dialect. Some have affirmed, that he did this out of respect for Democritus. Sprengel, with much more shew of truth, believes him to have used it solely from its superior elegance—an example in which he was imitated by Ctesias of Cnidos and others—and as being that in which ideas could be most perspicuously rendered.<sup>(2)</sup>

(1) Galen, Comm. i. in lib. de Fractur. Ælian. Var. Hist. lib. iv. c. 20. Lucian, De Conscrib. Hist. p. 614.—Whoever attends to the language, orthoepy, and spelling, in Spenser, Shakspeare, and Milton, must be aware what a few years sometimes effects in a tongue that is not settled.

(2) Histoire de la Medecine, tom. prem. p. 295.

## CHAPTER II.

THE DOGMATISTS AND SUCCESSORS OF HIPPOCRATES—  
THE SCHOOLS OF CNIDOS AND ITALY—PLATO—DIO-  
CLES—CHRYSIPPUS OF SOLIS—PRAXAGORAS.

THE arts and sciences had now received an impetus in Greece, which soon carried them to an almost meridian splendour. Hippocrates, as we have seen, had, from the dross and rubbish of the Asclepiades, collected materials for a new system of medicine; and, with genius, observation, and industry, succeeded, by his individual exertions, in leaving behind him a structure of surprising beauty and magnificence. He pointed out the connexions of physic with philosophy; discriminated their boundaries; and enriched the former with a vast variety of useful facts, and ingenious theories. Thucydides was employed in his historical records of the Peloponnesian war; Xeuxis and Phidias were dazzling the world by their achievements in painting and sculpture; while Euripides and Aristophanes were composing those miracles of dramatic art, which, in their peculiar vein, still remain unsurpassed.<sup>(1)</sup>

(1) Mitford's History of Greece, vol. ii. p. 110. *et seq.*

Socrates was also, at this era, conferring a dignity on our human nature.<sup>(1)</sup> By pointing out the inseparable connexion between wisdom and worth, he was breathing, as it were, a moral warmth into the cold speculations of philosophy ; and, practising what he preached, he illustrated his doctrines by the glorious tenor of his biography. But although the Athenians of the age of Pericles formed a nation as intellectual as any that the world has perhaps seen, the influence of a debasing superstition was too strong to be burst asunder by the common mind. Wealth, and the extreme diffusion of luxury, were undermining the props of that austere virtue, for which the people had been so famed. Laxity and immorality abounded in society ; and, after the battles of Leuctra and Mantinea, Greece rapidly fell into anarchy and confusion.<sup>(2)</sup> Principle was superseded by corruption ; the lessons of purer philosophy were neglected ; and learning had to look for a more congenial abode elsewhere.

In consequence of this melancholy revolution in the intellectual state of Greece, medicine, although prevented by the writings of Hippocrates from falling back into the night of barbarism, received a check, which for generations it did not recover. We have seen that, for many ages before the appearance of the great physician of Cos, the healing art existed

(1) Diogenes, lib. ii. s. 106. p. 142. Isocrat. de Pace, p. 249. For an excellent account of the life and philosophy of Socrates, the reader is referred to Enfield's History of Philosophy, vol. i. p. 155—181.

(2) Isocrat. de Pace, et de Permutat. Plutarch in Vita Periclis, p. 169.

only in a state of empirical deceit, or unscientific dogma. After his decease, it was long in making any decided advances. Indeed it happened with Hippocrates in medicine, as with Chaucer in English literature, that he not only far outstripped the age in which he lived, but left many succeeding generations without the hope of rivalling his excellencies. His sons Thessalus and Draco, together with Polybus, who married his daughter, practised as physicians, and, aided by the lustre shed around them by their great kinsman, all succeeded in attaining eminence. Galen speaks of Thessalus as an admirable man.<sup>(1)</sup> Draco, whose reputation was still higher, was the court physician of Archelaus, king of Macedonia. Polybus succeeded his father-in-law in giving instructions in the healing art;<sup>(2)</sup> and several books yet remain bearing his name, although M. Le Clerc has great doubts of their authenticity.<sup>(3)</sup>

We have already mentioned that the practice of medicine was confined to the Asclepiades, but the loftier and more philanthropic genius of Hippocrates saw and acknowledged the propriety of breaking through their system of unphilosophical exclusion. He gave oral instructions in anatomy and medicine to every one that shewed a disposition or a capacity to learn; thus laying open its mysteries to the world at large. His personal exertions appear to have been indefatigable; and what these failed to accom-

(1) Galen, Comm. ii. in lib. iii. Epidemic.

(2) Galen, Comm. i. in lib. de Nat. Hum. p. 2.

(3) Histoire de la Medecine, p. I. liv. iv. chap. 1.



plish was done by the diffusion of his admirable writings.

Among his disciples and more immediate successors, whose names have come down to us, are Prodicus, the author of several medical works;<sup>(1)</sup> Dexippus, who wrote a book on general physic, and two others on Prognostics;<sup>(2)</sup> and Apollonius, of whose practice it is recorded that he did not starve his patients.<sup>(3)</sup> Of Ctesias, a kinsman of Hippocrates, who acquired considerable renown for medical skill, it is reported, that, being taken prisoner by Artaxerxes Mnemon, in a battle fought against his brother Cyrns, four centuries anterior to the Christian era, he was successful in curing him of a severe wound, and was induced to settle in Persia, from whose archives he collected materials for its history, as well as that of Assyria.<sup>(4)</sup>

Of the school of Cnidos, the rival of that of Cos, we know nothing, except what can be gleaned from Hippocrates himself, from whom we learn that a system of idle conjecture or blind empiricism prevailed there. The teachers looked upon disease only in one point of view, and not as a series of consecutive symptoms; the consequence of which was, the

(1) Prodicus and Herodicus, from the similarity of the details concerning them, have been considered, and we think justly, as one and the same. See Le Clerc, p. 259, and Sprengel, vol. i. p. 274; Plato, Protagor. p. 285; Lucian de Conscript. Hist. p. 626; et Pausan. lib. vi. c. 10.

(2) Plutarch, de Stoicor. Repugnantiæ, et Aulus Gellius, Noct. Attic. lib. xvii. c. 2.

(3) Le Clerc, Histoire, part. prem. liv. iv. cap. 2.

(4) Diodor. de Sicilla, lib. ii. c. 32. Galen, lib. de Artic. Com. 3.



name being applied, that only one mode of management was admitted. They disclaimed all nosological arrangement, and practised on the faith of isolated facts, which could not be reduced to special rules.<sup>(1)</sup> Of the school which Pythagoras founded in Italy, it is only necessary here to say, that although it produced some able men, it was much more famous for its philosophy than its physic.<sup>(2)</sup>

A great name in the history of mind, at this time, blended itself with medical doctrine. Although the attention of "the divine" Plato was chiefly directed to psychology, it is evident from the *Timæus*, that, besides having studiously perused the writings of Hippocrates, he had bent the whole force of his enthusiastic genius towards physiology.

To the understanding of his peculiar doctrines, it is necessary to premise, that he founded his philosophical system on two universal principles, God and Matter; the latter taking the form of triangular atoms, from whose various combinations the four supposed elements, Fire, Air, Earth, and Water, were produced. He introduced the doctrine of final causes, but was a long time puzzled to account for the existence of a moving power. Assisted at length by a hint from Anaxagoras, he came to the conclu-

(1) Le Clerc, *Histoire*, part. prem. liv. iii. Cabanis, *Revolutions de Science Medicale*.

(2) *Vide* Dodwell de *Ætat. Pythag.* Justin. lib. xx. c. 4. Jamb. c. 5. Some of the followers of Pythagoras seem to have applied themselves to medicine, as a distinct department of study, much more sedulously than their master. See Elian, *Par. Hist.* lib. ix. cap. 22.

sion, that the cause of each existence is its best object, and that the object of all things is the best possible good.<sup>(1)</sup>

Following out these particular ideas, he explained the original formation of the human body, from the union of triangles, extremely minute and delicate, similar to such as constitute the basis of fire; that their first combination was in the creation of the spinal cord, and that from thence all the other members issued. The flesh he conceived to be a mixture of water, fire, and earth, with a matter saline and pungent.

He accounted for the causes of corporeal destruction, diseases, old age, and death, from the bodies around us making the frame dissolve and melt; its exhalations resolving themselves into its original elements; and the blood, which he supposed to fill up all the vacant spaces in the animal machine, not being generated in sufficient quantity to accomplish this end; more, in fact, being expended in the purposes of life, than could be restored.

He considered the blood as a fluid separated from the aliment by the action of a particular fire generated in the stomach by respiration. He accounted the redness of the blood a certain proof of the operation of this principle.<sup>(2)</sup>

(1) *Vide* the *Timæus*, *passim*. For an account of the particular speculations which it suggests, the reader is referred to Olympiodorus, to Ficinus, and to Melancthon de Vita Platonis, to Guarinus de Vit. Illust. Græc., and to Rapin's *Comp. Plat. et Aristot.*

(2) The idea that animal heat is generated in the blood, (and which was suggested by Plato,) has, in a great measure, been embraced by a distinguished modern writer, Her<sup>d</sup>er, in his "Thoughts on the Philosophy of the Histo-

Plato reckoned the spinal marrow the germ of the human body, the part from which all the others issued,—bone forming over it, and muscle over the bone. In the brain he placed the reasoning soul, and in the breast generosity, courage, and anger: the lungs encompassing the heart, to fan or feed these passions, as occasion required. He regarded the heart as the source alike of arteries and veins—between which he made no distinction—and of the blood, which, according to him, whirled rapidly through all parts of the body. He confused together the ligaments, tendons, and nerves, which he thought were nourished by the bones. Like Hippocrates, he divided the intestinal canal only into two parts, the colon and rectum. It is needless to point out any other of his anatomical whimsies.

From the principles on which Plato founded his system, it naturally followed, that health, being the distribution of the four elements in due proportion, disease would be accounted for, from the deficiency or superabundance of some particular one; continued fever being occasioned by excess of fire, quotidianis from excess of air, tertians of water, and quartans of earth.

Bile and phlegm were set down by him as matters produced from the dissolution of old or corrupted flesh, which vitiating the blood, the preserver of health, thus caused two species of diseases, phlegmons and catarrhs. On Plato's doctrine of the acidity or

ry of Man." (P. 1. p. 106.) By turning to Galen de Dogm. Hipp. et Plat. lib. viii., the explication there given will render the resemblance more apparent.

saltness of the humours, we shall find that other systems of physic were subsequently founded, modifications of which still hold their ground, even in our own day. The germ of the doctrine may perhaps be traced to Hippocrates, but certainly it is to Plato that we owe its more full development.

About this time Greece swarmed with sophists, whose example and precepts exerted a considerable influence over medical science; and, according to Galen, they were engaged in perpetual disputes about the doctrine of revulsion, which was a favourite one with Hippocrates himself.<sup>(1)</sup>

One sect of physicians contended for the propriety of carrying off the accumulation of superfluous humours, at a part as contiguous to the seat of disease as possible; and another, on the contrary, at that which was farthest removed from it. These contentions were no doubt in a considerable degree fostered by the erroneous ideas at that time prevalent, regarding the distribution of the great bloodvessels.

Passing over many members of what has been termed the Dogmatic school, and who, in a greater or less degree, distinguished themselves in the wake of Hippocrates, we come to Diocles Carystus, the most distinguished name among his more immediate successors. So high, indeed, was his reputation, that Pliny does not scruple to compare him to the great physician of Cos himself.<sup>(2)</sup>

(1) Galen de Dogm. Hipp. et Plat. lib. viii.

(2) Plin. lib. xxvi. cap. 20.; et Cels. Præfat. Both Galen and Dioscorides class Diocles among the dogmatics. De Facult. Aliment. lib. i. Præfat. ad Theriæ.

Diocles devoted more attention to anatomy than any of his predecessors, although his dissections appear to have been necessarily confined to the lower animals alone, from reasons we have formerly stated.<sup>(1)</sup> Nor were any particular discoveries made by him; for although the pointing out of the aorta and the arterial system has been attributed to his penetration, that honour most assuredly belongs not to him but to Aristotle.<sup>(2)</sup>

In surgery, he invented the bellulon, an instrument for extracting darts from the flesh, which is described by Celsus as being still in use in his time;<sup>(3)</sup> also a bandage for wounds of the head, which bore his name.

In practice he followed Hippocrates, with a few variations of no great importance. He was the first who gave the distinctive marks between colic and ilias, which had formerly been confusedly treated as one disease;<sup>(4)</sup> and, according to Cœlius Anrelianus—for his own writings, except in quotations, have been lost—he caused those afflicted with the former distemper to swallow a leaden bullet; no doubt with the same design that metallic mercury is still occasionally prescribed, that of forcing a passage by its mechanical weight.<sup>(5)</sup>

From observing that external wounds, abscesses, and inflammations, were attended with fever, he em-

(1) Galen de Administ. Anatom. lib. ii.

(2) Sprengel, Histoire, tom. i. p. 369.

(3) Cels. lib. vii. c. 5. See also Schulze, Hist. Med. p. 342.

(4) Galen de Locis Affectis, lib. iii. Cels. lib. iv. c. 13.

(5) De Causis Acutis, lib. iii. c. 17.

braced the theory, that general fever was occasioned by one or other of these causes operating internally. Galen informs us that he regarded sweating as a morbid or unnatural state of the system ;<sup>(1)</sup> from which, it is probable, as Sprengel hints, that he made no use of sudorifics in his practice.<sup>(2)</sup>

Many of the medical and dietetic precepts of Diocles are to be found scattered through the writings of Oribasius and other early authors, and have been industriously collected together by Gruner, in the second volume of the *Bibliotheca of the Ancient Physicians*. From that, it will be found, that few other of his peculiar curative methods are worthy of our commemoration.<sup>(3)</sup>

In personal character Diocles ranked high ; and Galen says, to his honour, that he practised, like Hippocrates, not for lucre or vain glory, but from real love of the medical art, and a pure spirit of humanity.<sup>(4)</sup>

Diocles is the reputed author of an *Epistle to Antigonus*, but Shulz has shewn that it is quite as apocryphal as those imputed to Hippocrates.<sup>(5)</sup> He wrote on the diseases of women, and on the weeks, in which latter he followed the Pythagorean doctrine of numbers, nearly to the same extent that

(1) Galen de Symptom. Different. p. 218.

(2) “ Il est naturel d'en conclure qu'il rejetait tous des sudorifiques, quoique Galien garde le silence à cet égard.” *Histoire*, tom. i. p. 370.

(3) Gruner, tom. ii. p. 612.

(4) See also Le Clerc, *Histoire*, liv. iv. chap. 5.

(5) Schulz *Historia Medicinæ*, p. 344.



Hippocrates had done.<sup>(1)</sup> Of all the critical days he reckoned the twenty-first by far the most important. He was the author, likewise, of several treatises on physic, all of which have perished save a fragment on the causes and cure of diseases, cited by Galen; and, according to Athenæus, of two others, one on poisons, and another on cookery.

This latter subject was a favourite one with Philistion, Erasistratus, Philotinus, Glaucus, and Dionysius, who were the Drs Kitchener of the day; and each of whom, according to Le Clerc, employed their pens upon it.<sup>(2)</sup> The high-toned mind of Plato did not relish this conjunction of arts, and Diocles, along with the rest, was made a but of satire on this score; the philosopher complaining, and with some shew of reason, that their recipes for dressing, instead of being conducive to health, were much more apt to engender disease.

Chrysippus of Solis was more famous for his unlimited condemnation of the practice and doctrines of others, than for any actual improvements he was the means of introducing into medical science. He is stigmatized by Galen, as having carried disorder alike into medicine and metaphysics; yet Pliny allows him to have possessed an intellect at once scrutinizing and subtle.<sup>(3)</sup> As far as concerned with our

(1) He maintained that a child born at the seventh month might be reared. (Censorinus de die Natali, c. vii. p. 33.) As to his accordance with Hippocrates on the doctrine of Numbers, a curious account is given by Macrobius. (Comm. in Somn. Scipion. lib. i. c. 6.)

(2) Histoire, liv. iv. cap. 5. versus finem.

(3) Galen de Differ. Puls. lib. ii. Plin. lib. xxiv. c. 1.

present purpose, we have only to add, that he disallowed active evacuations of all kinds, as also the use of the lancet. It is needless to say, that such innovations, so far from being improvements, must have been injurious to his patients, and consequently discreditable to himself.

We shall conclude this brief notice of what has been termed the Dogmatic School, with a few remarks on Praxagoras of Cos, the last of the Asclepiades who succeeded in leaving a name behind him.

Although Praxagoras passed in his day for a great anatomist, and assuredly paid much attention to that branch of knowledge, it does not appear that he succeeded in making any discoveries, or that either his physiology or pathology differed much from those of his predecessors. Among the peculiarities of his medical practice was the prescription of emetics in quinsy, in convulsions, and in enteritis;<sup>(1)</sup> and, as a surgeon, he is reputed to have been bold in the extreme, removing the uvula in desperate cases of cynauche, and making incisions into the bowels to remove obstructions, when milder measures failed.

From a belief that the seeds of every malady lay in the humours, he was consequently one of the most zealous supporters of the humoral pathology.<sup>(2)</sup> He acquiesced with Aristotle in thinking that the nutritious matter, derived from the aliment, underwent changes in passing through the different bloodvessels, according to the intensity of their innate heat. Of

(1) Cael. Aurelian. Acut. lib. iiii. c. 17.

(2) Galen de Natural. Potent. lib. ii. Ruffus Ephes. lib. i. c. 36.



these humours he acknowledged ten,—the temperate, the sweet, the vitreous, the acid, the nitrous, the saline, the bitter, the green, the yellow, and the viscid,—a catalogue as lengthy as the titles of a Spanish grandee.

Another of his medical theories consisted in referring the origin of intermittents to the vena cava; the cold fit first affecting the vertebral column, along which that vein partly runs.<sup>(1)</sup> Like Diocles, he made no use of medicines, except what were derived from the vegetable kingdom.<sup>(2)</sup>

By far the most valuable peculiarity of his practice, was the attention he paid to the pulse, as indicative of the state of the frame in fevers. This observation, so valuable in itself, was afterwards tortured into a thousand varieties of speculative subtlety by his disciples; having been made the basis of much wild and visionary hypothesis.<sup>(3)</sup>

Before dismissing the dogmatists, we may confess our conviction, founded on an examination of their theories and practice, that the controversy between them and the empirics was, in a great measure, like many other disputes which have agitated the world, a mere war of words. The latter party, to be sure, confined themselves solely to the results of experience, while the former busied themselves with remote and proximate causes. But, as Cabanis very justly remarks, “the empirics reasoned from expe-

(1) Ruffus, lib. i. c. 33.

(2) Plin. lib. xxvi. c. 6.

(3) Galen de Dogm. Hipp. et Platon. lib. vi.

rience, and the dogmatists experimented (if we may use the expression) with reasoning, and regarded as causes those circumstances which the former had introduced into the history of the disease. Analogy and induction were to the empirics what the connection of their dogmas, and their methodical application to the plans of cure, were to the dogmatists; but the former had the advantage of commencing the subject more directly. The name even which they bore, the terms which they employed, as well as the fundamental rules which they had prescribed to themselves, led them constantly back to the true road of analysis, which should always begin with observation.”<sup>(1)</sup>

(1) Cabanis, *Revolutions de Science Medicale*.

## CHAPTER III.

## OF ARISTOTLE AND THE PERIPATETIC SCHOOL.

BEFORE leaving Greece, and following the tide of learning and philosophy into Egypt, we must briefly advert to Aristotle, who, although not strictly a physician, was the promulgator of doctrines, whose extension was for a long time powerfully felt in medicine. Indeed, generally speaking, his philosophy exerted a wider and more permanent influence over the mind of the world, than any which either preceded, or has come after it. Commentary upon commentary was heaped by the schoolmen over his doctrines, till the precise was rendered dubious, and the dubious still more dark; and, from the time of Alexander the Great, down to the reformations of Luther and Calvin, all the philosophy of Asia and Europe paid tribute to the master-spirit of Aristotle.

A happy combination of circumstances made the Stagyræite the preceptor of Alexander the Great; and, when the pupil was in the zenith of his power, he forgot not the love of science, which had been instilled into his early mind. In the most munificent way, he furnished Aristotle with the means of pur-

suing his studies, and extending his researches ; collecting for him, during his campaigning in foreign lands, all the objects of natural curiosity, which were rare or valuable.<sup>(1)</sup> Indefatigable as were the exertions of the philosopher, he could not, without this princely patronage, have succeeded in amassing such a treasury of natural knowledge. The expeditions of the great conqueror supplied materials which were otherwise unattainable. An immense addition was thus made to botany and zoology ; while the penetrating genius of Aristotle systematized the loose facts of his predecessors and cotemporaries, and added what was worthy of preservation to the result of his own observations. Philosophy, which had been hitherto almost confined to the intellect of Greece, was thus extended by comparison with the various tenets professed by the sages of India, Persia, and Egypt.

The great reputation of Aristotle, however, was, as we have just said, less derived from his medical or physiological discoveries, than from his being the father of comparative anatomy,—a branch of study which has occasionally tended to throw considerable light on human organization.<sup>(2)</sup>

As, in the time of Aristotle, the Greeks continued with the same inveterate prejudice to consider the bodies of the dead, as something sacred and inviolable, there is every reason to suppose, not only from this circumstance, but from the internal evidence of

(1) Plin. lib. viii. c. 16.

(2) *Vide*, for example, the *Histor. Animal.* lib. i. c. 2. et lib. ii. c. 17.

his writings, that his knowledge of human anatomy was either wholly derived from his predecessors, or from comparison with the corresponding parts in the inferior animals. Indeed, this is quite evident from a passage of his own, which says, that the internal parts of men are unknown, and that his ideas concerning them were borrowed from the analogy just referred to.<sup>(1)</sup> What he has given of human anatomy is in a great measure borrowed from Hippocrates,—the only improvements on which being his naming the great artery of the heart, the aorta,<sup>(2)</sup> and his more correctly dividing the intestinal tube into the jejunum, cæcum, colon, and rectum.<sup>(3)</sup>

To the heart, Aristotle rather over-liberally gives three ventricles;<sup>(4)</sup> from, it is supposed, having included the expansion at the origin of the aorta among the number.<sup>(5)</sup> He imagined this third ventricle destined for the reception of the temperate blood, the hot going to the right, and the cold to the left. His ideas of the nervous system were exceedingly vague and erroneous. He reckoned the brain a combination of earth and water, of no paramount importance to the animal economy; and supposed a

(1) *Hist. Animal. lib. i. c. 16.* Olaus Borrichius *De Hermetis Egypt. et Chimei Sapientia.*

(2) *Hist. Animal. lib. i. c. 16. lib. iii. c. 3.* *Vide etiam* Galen *de Venar. et Arter. Dissert. p. 197.*

(3) *Le Clerc, Hlstoire, p. p. lib. iv. c. 4.* Portal. *Hist. tom. i. 41.*

(4) *Hist. Animal. lib. i. c. 17. Lib. iii. c. 3.*

(5) *Riolan, Opp. Nov. Anat. p. 602.* Sprengel thinks this surmise inadmissible, as, in another part of his writings, he makes the same assertion. *De Partibus Animal. lib. iii. c. 7.*

part of the cranium empty, although some believe that he here only alluded to the ventricles.<sup>(1)</sup>

His physiology, although full of ingenuity, was equally visionary, as may be seen from the ideas he entertained regarding the functions of the lungs, liver, and kidneys.<sup>(2)</sup> He supposed the heart to be the origin of all the nerves, for no better reason than that it was liberally supplied with them, and, like his predecessors, he occasionally makes a sad jumble of nerve, tendon, and ligament.<sup>(3)</sup> Sprengel has endeavoured to make out, by several passages in the History of Animals, that Aristotle was perfectly acquainted with the distinction between them;<sup>(4)</sup> while M. de Clerc has clearly shewn, on the other hand, that many other portions of his writings prove this not to have been the case. The great service that Aristotle conferred on anatomy was in his dividing the body into sections, to which he gave names.

(1) Aristotle décrit le cerveau comme un corps humide, depourvu de sang, qui remplit la cavité de la tête. Le cervelet est situé à la partie postérieure. Il existe dans la tête un espece vide. Sprengel, Histoire, tom. i. p. 389.

(2) Histor. Animal. lib. iii. c. 1.

(3) Histor. Animal. lib. iii. c. 4.

(4) "Sa principale decouverte en anatomie fut celle des nerfs, auxquels il ne donna pas le nom de νεῦρα, et qu'il appella πόροι τῆς ἐγκεφαλῆς; on a cru qu'il les designait sous la premiere de ces deux denominations, et on l'accusa d'une erreur grossiere, parce qu'il pretend que les νεῦρα tirent leur origine de cœur." Histoire, tom. i. p. 385. *I'de* Histor. Animal. lib. iii. c. 4.

Le Clerc, on the contrary—"S'il avoit su quel est l'usage des nerfs, il n'auroit pas non plus dit ailleurs, qu'il n'y a que les parties qui ont du sang qui puissent sentir, on avoir du sentiment, et il n'auroit pas soutenu, que la chair est le propre organe du sentiment. Quant au mouvement, s'il l'attribue aux nerfs, il est aisé de voir que les nerfs dont il veut parler, sont aussi des tendons, ou des ligamens." Histoire, prem. part. liv. iv. chap. 4. The passages on which Le Clerc founds his opinion are in Hist. Animal. lib. iii. c. 5; De Partibus Animal. lib. ii. c. 10; Ibidem, lib. iii. c. 4.

Were it our province, it would be easy to shew that in comparative anatomy he made some assertions equally crude and unwarranted ; but really they are not worth pointing out,—are mere motes in the sun, when set down beside the immense accumulation of facts, with which he has enriched almost every branch of natural study. His industry was only equalled by his intellect ; and in Aristotle, we find one of the most striking examples of what may be accomplished by a single man, and that within a life of moderate compass. To add to his merits, be it remembered that he was little indebted to nature for personal gifts, being diminutive in stature, slender in frame, and feeble in constitution. What Hippocrates did for medicine, Aristotle in an equal degree achieved for natural history. He collected together the few established facts that lay scattered in isolation amid the crude and erroneous compilations of his cotemporaries ; and brought together a stupendous mass of information, with which he laid the foundations of a new system of science.<sup>(1)</sup> So truly wonderful, indeed, is the accumulation of varied knowledge to be found in his works, that many have not been slow to assert, that he must have appropriated to himself a great deal of scientific property not his own, without acknowledgment. But such insinuations, unless substantiated, only tend to shew how miraculous were his industry and his intellect in the eyes of his detractors.

(1) Euseb. *Prepar. Evangel.* lib. xv. c. 6. Porphyr. *Vit. Pythagor.* p. 205.



The best answer to these calumnies may be found in the fact, that, anterior to his time, there existed little from which he could have stolen, even had he been so inclined. All that he could have met with were a few scattered facts, which, no doubt, assisted in confirming him in some of his generalizations, and were so made use of accordingly. We have no reason to surmise that he went farther than this—nor could he go. If he pillaged others, who were they, or what has become of them?

From the habit of delivering his lectures to his disciples, while walking with them among the trees of the Lyceum, the followers of his philosophy were denominated Peripatetics.<sup>(1)</sup> As far as this work is concerned, it only now remains for us to point out the principles on which he based his medical doctrines.

The Aristotelian system was founded on the four supposed elements, air, earth, fire, and water; and on the difference between matter and form, the former containing the possibility of existence, the latter whatever might be produced from it. He believed the principle of change to be inherent in Nature; and to this principle or moving power he applied the term force or faculty.<sup>(2)</sup> By admitting the existence of this source of activity, the Peripatetic school

(1) Enfield's History of Philosophy, vol. i. 259.

(2) "Aristote explique," says Sprengel, "le mot *force* ou *faculté*, δύναμις, que les medecins péripatéciciens ont si souvent employé, et donc ce nom au principe du mouvement ou de changement d'une chose." Histoire, t. i. p. 402.



placed themselves in direct opposition to the followers of the Atomical theory.

On this foundation, Aristotle made the human body to consist of a commixture of the elements,—with the exception of the membranes, vessels, and tendons, to whose formation he called in the aid of a homogeneous substance; and in this he differed from Anaxagoras, who made them the constituents of every part.<sup>(4)</sup>

He founded also the doctrine of the senses on the same basis; making water the principal part of the eye, the air of hearing, and smell a mixture of air and water. He says that sensations are communicated to us through the intervention of some particular body or medium, as vision by light, hearing by air, and taste by humidity.<sup>(2)</sup> Aristotle's definition of sleep is beautiful and ingenious. It is a particular change, he says, that pervades all the organs of sense, and which interrupts the energy, without suspending the faculty of sensation. This change is produced by vapours exhaled from the aliment, which, by virtue of their lightness, ascend to the head, where, being condensed by the cold of the brain, they recoil again upon the heart, and interrupt the energy of sensation.<sup>(3)</sup>

Lucian informs us, that the disciples of the Peripatetic school cultivated anatomy and physiology

(1) *De Generat. et Corrupt.* lib. ii. c. 3. *Meteorol.* lib. iv. c. 2. *De Partibus Animal.* lib. ii. c. 1.

(2) *De Anima*, lib. ii. c. 7.

(3) *De Somno et Vigil.* c. 1.—For the latest opinions regarding the nature of sleep, see the admirable treatise of my friend, Dr Macnish.

with no less eagerness than natural history.<sup>(1)</sup> His nephew Callisthenes accompanied Alexander in his expeditions; but, though a man of talent and penetration, was so austere in temper, as to fall a sacrifice to his uncourtly manners, on a vague suspicion of treason.<sup>(2)</sup> He was the author of two treatises, one on plants, and the other on anatomy.

Eudemus of Rhodes, another disciple of Aristotle, wrote a book on physic; and Premegerius of Mitylene, a treatise on gymnastics: but by far the most celebrated of his immediate followers was Theophrastus, who succeeded his master, and after his death undertook the management of his school.

Some of the physiological speculations of Theophrastus are highly curious. He believed, with Aristotle, that sweat is only the aqueous portion of the blood not required in nutrition, and made a distinction between it and the insensible perspiration, which he denominated Spirit.<sup>(3)</sup> He devoted much attention to this subject, and exerted all his ingenuity to account for the facts of moribund patients being commonly drenched in perspiration, and of that secretion being more copious during sleep than when we are awake.

In a treatise on odours, composed by him, and which is still extant, he maintains that simple bodies are inodorous, and that the presence of odour implies

(1) Lucian. *Vitar. Auctio*. p. 396-7.

(2) Arrian, *Expedit. Alexand.* lib. iv. c. 10.

(3) Theophrast. *de Sudoribus*, p. 231.

the foregone conclusion of a mixture of substances. He considers taste as somewhat analogous.<sup>(1)</sup> According to his theory, agreeable perfumes are created from the mingling of essences perfectly elaborated; fetid ones from decomposition and putrefaction. As a proof of his ingenuity and penetration, he remarks, in this same treatise, that the odour of some substances communicates itself to the urine; and that odours, when very pungent, are capable of producing stupefaction.

Theophrastus is also the author of three medical tracts, on Vertigo, on Lassitude, and on Palsy, all of which display considerable physiological acumen; but, as Le Clerc very justly observes,<sup>(2)</sup> he treats these subjects rather as a philosopher than as a physician, being more inquisitive after causes than remedies. After all, it was more as a botanist that he distinguished himself, than as a practitioner. As such, he stands in the first rank; having done almost as much for its advancement as Aristotle did for zoology. He catalogued five hundred plants, and gave descriptions of their physical qualities, as well as their medical virtues. It is not to be denied, however, that he not a little tortured some of the phenomena of the vegetable world, to fit them for the Procrustes bed of his favourite system.<sup>(3)</sup>

(1) Theophrast. de Odoribus, interpret. Furlano et Turnebo.

(2) Histoire, prem. part. liv. i. chap. 8.

(3) Fabric. Bib. Grec. v. ii. p. 241. Heinsius published an edition of his works, in 1631.

Such is the danger attached to an overweening love of system ; and in this foible Theophrastus has not failed to find followers in every succeeding age. Theophrastus has almost as much claim to be styled the Father of Botany, as Hippocrates of Physic, or Aristotle of Zoology.

## CHAPTER IV.

HEROPHILUS—ERASISTRATUS—AND THE MEDICAL  
SCHOOL OF ALEXANDRIA.

WE have seen that, before the appearance of Hippocrates, medicine consisted of only a few isolated facts, and was by no means entitled to the name of a science. Its treasury contained only the scattered observations of chance practitioners, and the record of cures performed at the Esculapian temples; the theories of disease being made the sport of every dominant maxim of philosophy. It was the great physician of Cos, who first pointed out the proper view in which medicine ought to be considered; fixed its particular laws from the results of observation; discriminated between it and general philosophy; and treated his patients on a plan, which rested on the basis of uniformity and experience. As a proof, however, that his genius far overflowed the spirit of his age, even his immediate successors, with his brilliant example to guide them, had not fortitude to walk in his footsteps; but again, ignorantly and superstitiously blending medicine with the reigning sophisms of philosophy, suffered themselves to be

led astray by the mystic speculations of Plato—to which were shortly afterwards added the vagaries of Aristotle and Epicurus.

On the dismemberment of the vast empire of Macedonia, after the death of Alexander the Great, science again found a patron and protector in Ptolemy Soter, and learning took up its chief abode at Alexandria. That Prince laid the foundations, on a munificent scale, of a national museum and library, sparing no expense in the collection of books and objects of natural history.<sup>(1)</sup> After his death these were greatly extended and enriched by his immediate successors, whose immense maritime commerce afforded the means of more decisively carrying their exertions into effect. It was here that popular prejudice first relaxed, in allowing the examination of dead bodies,—a triumph of the most singular kind for the furtherance of medicine; the ignorance of human anatomy being a perpetual stumbling-block in the path of its professors.<sup>(2)</sup>

The unwearied exertions of Ptolemy Philadelphus—himself a man of erudition—and of his successors, tended still more to increase the reputation of Alexandria as a seat of learning. The number of volumes in the Bruchium was said to have been

(1) *Vide* Vaillant's *Historia Ptolemæorum*, p. 23. Ptolemy Soter was himself the author of a history of Alexandria, of which Arrian has made ample use; besides being a patron of learning. Theodorus, Diodorus, Cronos, and Strabo of Lampsacus, all resided at his court. Diogen. lib. ii. c. 101, 111.

(2) "Ce furent eux enfin qui permirent aux medecins d'ouvrir les cadavres humains." Sprengel *Histoire*, tom. i. 427. Celsus in præfatione. Pliny also says, "Regibus corpora mortuorum ad scrutandos morbos insecantibus." lib. xix. c. 5.

700,000 ;<sup>(1)</sup> from which two things may be inferred, first, that neither trouble nor expense were spared in their collection ; and, secondly, that it must have been remarkable more for extent than selection. At all events, it afforded an opportunity of study nowhere else to be found in the world ; and, according to Cœlius Aurelianus, produced so many disciples of renown, that the fact of having been educated at Alexandria, was at length a sufficient passport to popular confidence.

According to the concurring testimony, alike of Celsus and Galen, the two great heads of the Egyptian medical school, Herophilus and Erasistratus, both flourished under Ptolemy Soter.

The older, and perhaps the more distinguished of the pair, was Herophilus, a disciple of the celebrated Praxagoras.<sup>(2)</sup> His writings are lost, and what we have of his doctrines is only to be gleaned from the pages of Celsus, Galen, Cœlius Aurelianus, and other writers, who have chanced to record them.

Herophilus and Erasistratus being the first who had an opportunity of practising human dissection—the bodies of criminals being given to them for that purpose, it may readily be supposed, that they not only detected many gross errors in the descriptions of their predecessors, but were enabled to make a variety of important discoveries. The reputation of both soon acquired a lustre, far eclipsing that of every cotemporary, and which for many ages rather

(1) Ammian. Marcell. Gell. noct. attic. lib. vi. c. 12.

(2) Galen, Method. Med. lib. I. p. 38.

increased than diminished. By their disciples they were almost deified; and such was the admiration in which Galen held Herophilus, that he considered his knowledge of human anatomy as absolutely perfect.<sup>(1)</sup> Gabriel Fallopius, a distinguished anatomical discoverer, of much more recent times, was not less unmeasured in his praise, declaring, that he would almost as soon think of contradicting the Gospel, as the authority of Herophilus.<sup>(2)</sup>

Celsus, Tertullian, and others, ascribe to both Herophilus and Erasistratus the shocking barbarity of opening the bodies of living criminals for the furtherance of their physiological views;<sup>(3)</sup> but the atrocity is too revolting to be believed, and probably originated in the horror with which human dissection was at first regarded, acquiring its utmost popular exaggeration.

Before the time of Herophilus, Neurology was a part of anatomical study, either almost overlooked or unknown. According to Rufus the Ephesian, he acknowledged three sorts of nerves. The first kind, which are the ministers of will, and communicate sensation, come partly from the brain, and partly from the spinal cord. The second, which serve for strengthening articulations, originate in one bone,

(1) Galen, de Dogm. Hipp. et Plat. lib. viii. p. 318.

(2) Fallop. Observat. p. 395.

(3) Cels. prefat. Tertullian de Animâ, c. 10. His words are curious. "Herophilus ille, medicus aut lanus, qui sexcentos exsecuit ut naturam scrutaretur, qui hominem odit ut nosset, nescio an omnia interna ejus liquido explorarit, ipsa morte mutante quæ vixerant, et morte non simplici, sed ipsa inter artificia exsectionis errante." p. 757.



and terminate in another. The last run from muscle to muscle.<sup>(1)</sup> From this, it is but too apparent, that Herophilus, like all his predecessors, fell into the error of confounding the tendons and ligaments with the nerves.

In the Anatomy of the Brain he made many important discoveries. He pointed out the torcular which still bears his name, the calamus scriptorius, and the choroid plexus, which he described with a classical precision. He regarded the brain as the centre of the nervous system.<sup>(2)</sup>

He called the pulmonary veins arteries, because they partook of the same office; distinguished, and named the duodenum, and gave a full, clear, and admirable description of the liver.

Scarcely was the pulsation of the arteries discovered, than Herophilus established a system upon it. From observing the varied force, tenuity, and quickness of the pulse, he imagined that there was some inherent or natural rhythm in its movements, similar to that of music—that this changed according to the different periods of life—and that the impelling power did not reside in the arteries themselves, but in the heart.<sup>(3)</sup>

With reference to this doctrine of the pulse, he considered diseases in three points of view—the diagnostic, the anamnestic, and the prognostic.<sup>(4)</sup> Ac-

(1) Rufus de Appellat. Part. lib. ii.

(2) Galen de Administ. Anatom. lib. ix. p. 194. Rufus, p. 36. Galen de Usu, Part lib. viii. Cels. lib. vii. c. i.

(3) Plin. lib. xi. c. 37. Galen de Diff. Puls. lib. ii. p. 24.

(4) Galen de Plenitud. p. 350.

cording to his mode of definition, medicine is a science treating of the system in a natural state,—in an unnatural state,—and of things not natural or in an unhealthy state. His pathology appears to have been deformed by a vain display of erudition, and of metaphysical subtlety sublimated to a mysticism, which would have delighted Kant or Jacob Behmen.<sup>(1)</sup>

In developing the causes of diseases, he followed Praxagoras, believing them to result almost uniformly from a vitiation of the humours. He attributed paralysis to a cessation of the vital force, and believed that sudden death often resulted from a palsy of the heart.<sup>(2)</sup>

From his predilection for soothing or specific remedies, Galen designates him the demi-empiric.<sup>(3)</sup> He relied on the efficacy of very few medicines; and these almost wholly of the simplest kind.

The authority of Herophilus as an anatomist was so high in ancient times, that the names he has given to different parts are still retained; although, in a few cases, less from their discrimination, than in respect for him, who was beyond all doubt one of the greatest physicians and surgeons of the olden day.

Erasistratus, at the same period, acquired great fame for his anatomical knowledge. A brilliant cure, which he had effected at the court of Seleucus

(1) Plin. lib. ix. p. 37. lib. xxvi. c. ii.

(2) This very striking idea is recorded by Cælius Aurelianus. Chron. lib. ii. c. i. p. 348.

(3) Galen, Meth. Med. lib. iii. p. 63.

Nicanor, raised him at once to renown and popularity;<sup>(1)</sup> but being of a speculative turn he abandoned practice, and relinquishing the honours with which he was surrounded, returned to Alexandria, as affording the most ample opportunities of study.

Like Herophilus his attention was at first chiefly directed to the brain, and the examination of its structure. According to Rufus he distinguished the nerves into those of sensation and those of motion<sup>(2)</sup>—the former arising from the dura mater, the latter from the substance of the cerebrum. So we see that, like all his predecessors, he confounded the nerves with tendons and ligamentous membranes.

It is remarked by Soranus, that Herophilus pointed out vessels in the mesentery containing milk; but his account is much less definite and exact than that of Erasistratus, who says, that it is only at particular times they are so found, being at others quite empty.<sup>(3)</sup> He also pointed out the valves at the termination of the vena cava, and, according to Galen, believed them to be placed there for the purpose of preventing blood, that had once got to the heart, retrograding back to the vein.<sup>(4)</sup> He believed with Herophilus, that the arteries were filled with air, and, indeed, makes that element one of the

(1) Plutarch, *Vita Demetrii*, p. 907. Both Appian and Lucian mention the cure, but omit the name of the physician. *De Bello Syr.* c. 126. *De Deo Syria*, p. 669.

(2) Rufus, p. 65.

(3) Galen *de Administrat. Anat.* lib. vii. p. 184.

(4) From him these valves derive their appellation of *πυγλωγμοί*.

grand principles of his physiology, supposing it to be inspired by the lungs for the purpose of filling the arteries.<sup>(1)</sup>

This air he distinguished into two sorts—the vital air which stimulates the heart, and the spiritual air which operates through the medium of the brain.<sup>(2)</sup> He attributed all fevers and inflammations to blood insinuating itself into the arteries, troubling the air within them, and producing irregular movements. He did not consider the pulse a matter of such importance as Herophilus did. He was the first who had a correct idea of the use of the trachea, and showed the falsity of the ancient doctrine regarding the passage of fluids, taken by the mouth into the lungs.<sup>(3)</sup>

As a strict disciple of Chrysippus, for whose writings and medical theories Erasistratus entertained the highest veneration, he condemned bleeding and all active evacuations; trusting principally to regimen and simples.<sup>(4)</sup> His surgical practice was characterized by boldness and decision. In scirrhoties and tumours of the liver he did not scruple to make an ample division of the integuments, and

(1) Galen de Usu Respirat. p. 159.

(2) The πνευμα ζωτικόν and the πνευμα ψυχικόν. Vide Galen de Dogm. Hipp. et Plat. lib. li. p. 263.

(3) Plutarch Symposiac, lib. vii. p. 112. Lucian de Conscrib. Hist. p. 605.

(4) Galen de Venæ Sect. adv. Erasist. p. 5. Cælius Aurelianus, however, maintains, that it was not Erasistratus himself, but his followers, who foolishly condemned bloodletting under any circumstances. "Siquidem Erasistratus," he says, "phlebotomari præcepit patientes. Alii vero ejus sectatores etiam fieri principalliter damnaverunt hoc adjutorii genus, tanquam virium vexabile. Chron. lib. 13.

try applications to that viscus itself, which he described as a parenchymatous substance, principally formed of a congeries of veins. He followed the same practice in diseases of the spleen, which he regarded as of little consequence in the animal economy. In cases of retention of urine he made use of the particular catheter, which long bore his name.<sup>(1)</sup>

The valves of the vessels of the heart were remarked by Erasistratus; and it was either himself, or some one of his disciples, who named them the Tricuspid, and Sigmoid or Semilunar. He also knew and noted its systole and diastole.

Of the many disciples of the Alexandrian school, who distinguished themselves by their medical precepts and writings, it is only necessary to particularize a few of the more remarkable. Demetrius cultivated pathology with much assiduity and success; and, according to Cælius Aurelianus, divided hemorrhages into two classes; the first arising from lesion of the vessels, followed by rupture or sphacelus; the other from extreme tenuity, permitting of exudation.<sup>(2)</sup> It is remarked by Sprengel, that Gaubius evidently borrowed from this system the ideas on which he established his own, as both rest on nearly the same basis.<sup>(3)</sup> He considered peri-

(1) Introduc. in Galen. Opp. Cels. lib. iii. Cælius Aurelianus. Chron. lib. lii. c. 4. His catheter had the form of the Roman S. Sprengel, Histoire, tom. i. p. 450.

(2) Cæl. Aurelianus. Chron. lib. ii. c. 10.

(3) Histoire, tome i. p. 452.—Compare with Gaubius, Institut. Pathol. Med. 203.

pneumony and pleurisy as only severer or lighter varieties of the same disease; the former being inflammation of the whole lung, the latter only of a portion. He also pointed out the distinction between tympanites and dropsy,—nervous tremor and convulsions.<sup>(1)</sup>

Mantins, who was a strict adherent to the principles of Herophilus, wrote treatises on the preparation of medicines, on the duties of a physician, and on surgical dressings. He could not stem the torrent of empiricism, which in his time strove to overflow the empire of medicine; but has gained the praises of Galen for having kept himself nobly aloof from it.<sup>(2)</sup>

Like Demetrius, Bacchius of Tanagra rendered himself famous for his theory of hemorrhages, which he imputed to four causes,—laceration, dissolution, anastomosis, and transudation.<sup>(3)</sup> He maintained that the pulse made itself felt through all parts of the body at the same instant, and that the arteries are constantly filled with blood,—a supposed heresy which called down upon him the liveliest denunciations of the followers of Erasistratus. He composed a vocabulary of the abstruse or obscure terms to be found in the writings of Hippocrates, upon whose aphorisms he was one of the earliest commentators.<sup>(4)</sup>

(1) Cæl. Aurelian. Acut. lib. 1. 2. et 3.

(2) Galen. Compos. Medicam. sec. loca, lib. vi.

(3) Cæl. Aurel. Tard. lib. ii. p. 390.

(4) Galen. Comm. Aphor. vii. 63.

Andreas of Carystus maintained that fractured bones unite through the medium of the marrow; and invented several machines for reducing luxations of the femur.<sup>(1)</sup> He wrote treatises on poisons, on the qualities of different medicines, on hydrophobia, and on pantophobia, which he characterizes as a distinct species of nervous malady.<sup>(2)</sup> Like the Stoics, he confounded the soul with the senses, and almost regarded it as the result of organization.<sup>(3)</sup>

Almost all the disciples of Herophilus flourished at Alexandria, till the neglect or persecution of the sovereigns of Egypt compelled art and science to seek out a more suitable asylum elsewhere. At Laodicea they formed a school, the chief of which was Zeuxis—a person who commented on the writings of Hippocrates, in a style deformed by tastelessness and barbarisms; and who endeavoured to lead back medicine from all philosophical speculation to blind empiricism.<sup>(4)</sup>

The surgeons of the Alexandrian school distinguished themselves by the nicety of their dressings and bandagings, of which they invented a great variety. Lithotomy was practised by particular individuals, who devoted themselves exclusively to that operation; and we are told that one of them, Ammonius, employed an instrument by means of which

(1) *Cel. lib. vi. c. 6.*

(2) *Cæl. Aurel. Acut. lib. iii. c. 9.*

(3) *Tertullian, de Anima, c. 15.*

(4) *Erotian. p. 214. 216.*



he broke down stones in the bladder ;<sup>(1)</sup> another proof, how much modern innovations are often mere renovations of obsolete practice,—and of the truth of Solomon's apophthegm, that there is nothing new under the sun.

Before concluding our remarks on individual members of this school, we may notice, that Xenophon of Cos, who is said to have been a follower of Erasistratus, communicated the fact of our being able to check hemorrhage from a member, by encircling it tightly with a ligature.<sup>(2)</sup>

Almost none of the Alexandrian writers have descended to us, save by extract,—a matter which cannot be sufficiently regretted, as the reader may be sufficiently aware, from the value of the fragments we have been able to glean regarding their anatomical knowledge and physiological theories. The famous national library having been consumed by fire in the time of Julius Cæsar, the greater part of the writings of the Alexandrian school irrecoverably perished.<sup>(3)</sup> What remains to us were obtained from copies in the Temple of Serapis, or from the great library of Pergamus, which, according to Plutarch, contained not fewer than 200,000 volumes; and was presented to Cleopatra by the enamoured Mark Antony.<sup>(4)</sup> But as the original and almost

(1) Cels. lib. vii. c. 26.

(2) Cæl. Aurel. Tard. lib. ii. c. 13.

(3) Seneca, de Tranquillitate, c. 9.—Ammian. Marcell. lib. xxii. c. 17.

(4) Plutarch, in Vita Anton. p. 493.



sole copy of many a work was deposited in the national collection, the loss to medicine, as well as to almost every other branch of human art and science, was immense.

The extension of commerce, both maritime and overland, under the Ptolemies, led to the knowledge of many new substances, especially from the vegetable kingdom, which the discoverers used on account of their visible effects ; without troubling themselves with any analytical investigation into their peculiar qualities. The separation of medicine from surgery, which had also at first promised such happy consequences, tended ultimately, by a breaking down into still more minute divisions, to engender only fraud and quackery. Indeed, a great many practitioners confined themselves not only to the performance of a single operation, but to the preparation of a single pharmaceutical recipe, which, like Solomon's balm of Gilead, or Dalby's carminative, bore the name of its inventor, and was blazed about with a puff direct, as completely specific in a certain catalogue of diseases. Upon no very authentic grounds, it is also asserted, that the first female practitioner in midwifery exhibited herself at Alexandria, under the name of Agnodice, and acquired great popularity among her own sex, for her skill and adroitness.<sup>(1)</sup>

The baleful philosophy of Pyrrho—if scepticism so gross as to deny the perceptions derived through

(1) Hygen. Fabul. 274.

the senses be worthy of such a denomination—was at this time unfortunately acquiring a pretty general acceptation, and contributed not a little to secure the triumph of empiricism, which, indeed, was finally embraced by nearly all the disciples of Herophilus.<sup>(2)</sup> By conjoining it with the physiological mysticisms, and sophistical dialectics of their master, they erected for themselves a bulwark unassailable by reason, and at which the dogmatists aimed all shafts in vain.

(1) Photius, Cod. 212.—Sect. Empiric. Pyrrh. Hyp. lib. ci.<sup>o</sup>. 29.

## CHAPTER V.

ASCLEPIADES—THEMISON—SORANUS—CÆLIUS  
AURELIANUS—AND THE METHODIC SCHOOL.

THE seat of empire having been transferred to Europe, under the majestic sway of Julius Cæsar, the arts and sciences followed thither, and Rome became the grand centre of intellectual illumination. The philosophy of the Greeks had been made known to Europe, by the victorious expeditions of Lucullus and Pompey; and many of the learned left Egypt and Asia Minor to take up their abode, and pursue the fortunes of life, in Italy.

The national character of the Romans was more distinguished for intellect and shrewd sense, than for imagination or inventive genius. In many points of view the Republic had made immense strides towards civilization and refinement, had acquired boundless military renown, and had produced a host of celebrated names. Much of the Roman science and learning, however, came only at second hand. Where they found materials, they were capable of improving,—for that was the work of taste

and industry ; but, in the fine arts,—painting, poetry, and sculpture, they seldom invented, if we use the term invention in its highest sense.

This assertion may appear startling ; but let it be recollected that Homer, in epic poetry—Sophocles, Enripides, and Eschylus, in dramatic,—and Pindar, in lyric, had exhibited the imaginative faculties in a light of grandeur, which no succeeding age has outshone. In painting, and more especially in sculpture, the same holds true. The names of Apelles, Phidias, and Praxiteles, had become synonymous with all that is beautiful and harmonious. While Heraclitus, Democritus, Socrates, Plato, and Aristotle, had shed a flood of illumination on the hidden laws of mind and matter.

Let it be remembered, also, that these great men had, properly speaking, no precursors. The works of creation, and the world of mind, lay alike in twilight shadow. What they did and made, was of their own doing and fashioning,—the inventions of genius, pure, original, and almost unassisted.

The literature and philosophy of Rome can scarcely be looked upon in this light. The excellence of Italian genius lay more, as we have just said, in taste and elaboration. For splendour of fancy and depth of natural pathos, Virgil is far inferior to his great Grecian prototype ; but his intellect and imagination being in more correct equipoise, the blemishes of the *Æneid* are less glaring than those of the Homeric poems. Horace, in like manner, is inferior to Pin-

dar in lyric grandeur and dignity, but his pictures of life are more mellow and warm; he has a quicker eye for that observation which is elicited by sensible objects; and his ear for melody is equally fine. The versification of Pindar is like the thundering cataract; that of Horace may be compared to the murmuring stream.

On the other hand, in whatever related to observation, research, or the reasoning powers, the genius of Rome shone pre-eminent. Cicero is a noble example of philosophical acumen, just perception, and varied strength; while as historians, and in all the requisites necessary for excellence in that department of literature, Xenophon and Thucydides are fairly matched by Tacitus and Livy. In them we have that masculine vigour of intellect, and freshness of delineation, chastened by refined taste, which lend their peculiar charm and character to the best Roman works. Yet, after all, the poetry, painting, sculpture, and philosophy of the early Italians were only *rifacimentos* from the Greeks. They saw and felt excellence; but were more remarkable for following on old paths, than in hewing out new ones.

In nothing did this more remarkably show itself, than with regard to medicine. While the people were gradually emerging from the gloom of barbarism into the sunshine of civilization, there existed at Rome, as in all half-polished countries, a strong leaven of superstitious observance, which blended itself with almost every occurrence of daily life. Cures

were accordingly wrought, as among the early Assyrians and Egyptians, by spells and incantation; <sup>(1)</sup> but, long after society had arrived at a degree of illumination, on almost every other branch of human research, the Roman people retained a bigotted abhorrence against the practice of medicine. Nor was this confined to the mere plebeian rabble—for a letter, yet extant, of Cato the Censor, shows, that he insisted on managing his household and dependents, during sickness, out of a volume in his possession, pointing out the necessary offerings and amulets. <sup>(2)</sup> But not only does that violent and prejudiced man speak of the practitioners of medicine with disgust and hatred, but there actually existed a public edict, discouraging all countenance to the professed exercise of physic, and recommending faith, in traditional prescriptions, and religious rites. Nothing, indeed, can be more astonishing than the fact, that

(1) Plin. lib. xiii. c. 13. Tit. Liv. lib. i. c. 31. Dionys. Halicarn. lib. iv. p. 259.

(2) Cato de Re Rustica, c. 156. p. 103. Plin. lib. xx. c. 9. Schulz, however, refutes the commonly received opinion, (among others by Agrippa (de Vanitate Scientiarum), and by Montaigne in his Essays, that Cato banished the Greek physicians from Rome. Hist. Med. p. 432.

We cannot refrain quoting Cato's words of incantation for curing dislocation or fracture;—"Luxum si quod est, hac cautione sanum fiet. Harundinem prende tibi viridem P. IV. aut V. longani. Mediam diffinde, et duo homines teneant ad coxendices. Incipe cantare, 'In alio, S. F. motas veta daries dardaries astataries dissunapitur,' usque dum coeant. Ferrum insuper jactato. Ubi coierint, et altera alteram tetigerit; id manu prende, et dextra sinistra præcide. Ad luxum aut ad fracturam alliga, sanum fiet, et tamen quotidie cantato in alio, S. F. vel luxato. Vel hoc modo, 'Huat hanat huat ista pista sista, domiabo damnaustra,' et luxato. Vel hoc modo, "Huat haut haut ista sis tar sis ardannabon damnaustra." De Re Rustica, c. 160.

Popina (Annot. in Catonem, p. 163.) informs us that the S. F. signify *Sanitas Fracto*.

Rome existed nearly five centuries and a half without the possession of a single regular devotee of medicine. The first who received public patronage was Archagatus of the Alexandrian school, a native of Peloponnesus, who settled there, under the consulate of Lucius Emilius and Marcus Livius. Pliny quotes from Cassius Hemina, that at first he was lauded for his surgical skill; but that, in a short time, popular disgust and fury against him had attained such a height, that he was compelled to shut shop, and suspend his operations,—his original title of *Healer of wounds* having been changed by the rabble into that of *Executioner*.<sup>(1)</sup>

Another attempt was shortly afterwards made at medical location in the Roman capital, by Asclepiades, a native of Bithynia, and with happier results; for the conquest of the East had, a little before this time, introduced every species of luxury. Being a person of tact and engaging manners, he accomplished a footing, and, by the performance of several strikingly fortunate cases, speedily rose into general favour.<sup>(2)</sup>

Instead of shocking the feelings, and repelling sympathy by the performance of surgical operations, he wisely restricted himself almost entirely to medical practice. Educated in the schools of eloquence, and himself a rhetorician, he appears to have possessed a disposition of the most pliant and suasive kind. He could accommodate his doctrines to the

(1) Plinii, lib. xxix. cap. 1.

(2) Cicero de Oratore, lib. i. c. 14. Plutarch, Symposiac, lib. viii.



times in which he lived; and, rather than provoke hostility, he is said to have often yielded to the caprices of his patients.<sup>(1)</sup> By novel methods of cure, directed by bold philosophical views, he not only acquired great personal reputation, but so overcame the irritability of popular prejudices, as to create an arena at Rome, in all times coming, for the exertion of every enterprising practitioner of the healing art. He laid the foundations of a system of medicine, according to a new theory, the more complete development of which was, however, left to his successors.

Shortly after the time of Heraclitus, Epicurus published his system, which, rejecting an intelligent cause, attributed the creation of the universe to the fortuitous concourse of atoms. Even the power of perceiving truth was referred to the senses; thought itself being only considered as a faculty, produced by atoms of the most delicate and attenuated kind; while the inferior workings of the soul resulted from corpuscles of a grosser nature. Final causes were of course banished from his philosophy.<sup>(2)</sup>

Asclepiades, in a great measure, embraced the doctrines of the atomical systematists. In some points he gave the preference to Epicurus; but both Galen and Sextus Empiricus have shewn, that his peculiar theories are more consonant with those of

(1) Cœl. Aurelian. acut. lib. i. c. 15. Plin. lib. xxiii. c. 1.

(2) See for notices of the Epicurean philosophy Cicero de Nat. Deor. lib. i. c. 25. Diogenes Laertes, lib. x. Plutarch de Oracul. Defect. p. 420. Galen de Constit. Art. Med. et de Elementis. lib. 1. p. 49.



the philosopher of Pontus.<sup>(1)</sup> Many of the ideas of Asclepiades were, however, quite his own.

Asclepiades believed that atoms were of irregular forms,—friable, divisible, and subject to change; which, rolling in the void, clashed against each other, and assumed new forms, from which all visible bodies were produced.<sup>(2)</sup> He also contended, that, although these new combinations possessed sensible qualities, such qualities were not inherent in the individual atoms; simple bodies differing entirely in their properties from compound bodies.<sup>(3)</sup>

Applying these principles to the human frame, he maintained that the body is an accidental combination of corpuscles of a definite form, the regular motion of which produced health, and the irregular disease. This was the grand foundation of his medical theories.<sup>(4)</sup>

These most delicate atoms of Asclepiades, which are only another name for the pneuma, ether, or spirit of his predecessors, are, according to him, furnished to the body either by digested aliment or by the pulmonary organs.<sup>(5)</sup> Nothing, however, can be more vague or unsatisfactory than much of his physiological rea-

(1) Galen de Tremore, p. 369. Sext. Empiric. pyrrhon. hypotyp. lib. iii. s. 32.

(2) “ Il suppose que ces atomes sont disproportionnés, *αναρμοι*, mais pourtant divisibles, friables, *θραυστοι*, et sujets à differens changemens, *παθητοι*.” Sprengel, tom. ii. p. 8.

(3) Cœl. Aurelian. Acut. lib. i. c. 14.

(4) Galen. Method. Med. lib. iv.

(5) Octav. Horatian. ad. Euseb. lib. iv. p. 105. et Plutarch. de Placit. Philosoph. lib. iv. c. 22.

soning; more especially regarding the functions of the kidney and lungs. His theory of digestion is marked by ingenuity, and a good deal of truth. He maintains that aliment is dissolved or divided in the stomach into minute particles or corpuscles, which are no longer possessed of the peculiar properties of the thing swallowed, but are changed in their nature, so as to be rendered capable of the nourishment of the different textures which compose the body,—one portion going to artery, another to nerve, a third to muscle, and a fourth to bone.<sup>(1)</sup>

Of his pathology, we need only say that it is based entirely on the doctrine of pores and corpuscles. Health consisted in the regular distribution of the atoms, and the requisite adaptation of the pores; disease to irregularity in the former, and obstruction in the latter.<sup>(2)</sup>

We know little of the anatomy of Asclepiades; and when we remember that he was not regularly educated to medicine, there is every reason to believe that it was any thing but profound. In Celsus, and in Cœlius Aurelianus, we find some accounts of his surgery, more especially in ascites and in quinsy.<sup>(3)</sup> For the relief of the former he recommends tapping; but through a very small aperture. His practice in the latter disease was much bolder. He opened the veins of the arm, tongue, forehead, or

(1) Galen. de Natur. Facult. lib. iiii. p. 111. et Definit. Med. p. 393. See excellent epitomes of the physiology of Asclepiades both in Le Clerc (*Histoire*, p. 395) and Sprengel. (*Histoire*, tom. ii. p. 10. *et seq.*)

(2) Cœl. Aurelian. de Acut. lib. i. c. 14. Galen contra Julian, p. 341.

(3) Cels. lib. iiii. c. 18. Cœl. Aurel. Acut. lib. iiii. c. 4.

angles of the eyes,—sometimes employed cupping,—and, in cases of extremity, scarified the tonsils, or even attempted laryngotomy.

Asclepiades was, however, principally devoted to the practice of medicine, in which he acquired so great a reputation, as to have been invited to the court of Pontus by Mithridates.<sup>(1)</sup> He was exceedingly arrogant in his pretensions, condemning every theory and mode of cure save his own; and although a person of singular accomplishment and penetration, he wanted assiduity for investigation and research. What he possessed not in himself, he could not bear in others; and hence originated his captious but ineffective ridicule against the observant system of Hippocrates.<sup>(2)</sup>

The merits of Asclepiades were great and varied, and his histories of disease, as recorded by Cœlius, are fuller and more extensive than any which have descended to us from remoter antiquity. He was the first who divided diseases into acute and chronic,<sup>(3)</sup>—a distinction certainly founded in truth; and to him also we owe the introduction into medicine of cold baths and affusion as curative expedients.<sup>(4)</sup> He banished all violent remedies from practice, and trusted in a great measure to diet and regimen.<sup>(5)</sup>

(1) He was the personal friend of Cicero, who is eloquent in his praise, not only as a physician, but as an orator. *De Oratore*, lib. i.

(2) Galen *de Venæ Sect.* adv. Erasistrat. p. 3.

(3) Cœl. Aurelian. *de Chronic*, lib. iii. c. 3.

(4) Cels. lib. iv. c. 19. Plin. lib. xxiii. c. 1. Cœl. Aurelian. *de Acut.* lib. i c. 14.

(5) Cels. lib. ii. c. 14.

Wine was in his eyes a kind of panacea. He made use of it in almost all diseases, and reckoned it sovereign in restoring the animal vigour, especially in debility from fever.<sup>(1)</sup>

Asclepiades appears to have been quite a man of the world, and did not occasionally hesitate to indulge in that quackery which his better judgment must have despised, however pleasing at the time to his patients. He was the picture and paragon of court physicians; a *tuto, cito, et jucunde*, practitioner. Sea sailing and carriage jaunting were admirable in cases of obstruction; and, in *mimini-pimini* complaints, where physic was at a discount, recourse was had to declamation and dancing,—music, vocal and instrumental.<sup>(2)</sup>

With all his defects, Asclepiades was far from being a common man; he has been underrated by some and overrated by others; but it must appear, from what we have said, that he possessed more than enough of penetration and originality to cover his failings. Borden compares Asclepiades to Boerhaave; but Cabanis remarks, with justice, that there are many more points of resemblance between the latter and Galen.<sup>(3)</sup>

(1) Cœl. Aurelian. de Acut. lib. ii. c. 9. Cels. lib. iii. c. 24. Asclepiades was in the practice of frequently ordering wine diluted with sea water to his patients, under the idea that it was thus rendered more efficacious in shutting up the pores. This wine was called *Vinum tethalassomenon*, (Cœl. Aurelian. de Acut. lib. i. c. 14.), and was different from the new wine sent to sea to be improved, and thence termed *Thalassites*. (Plin. liv. xiv. c. 8.)

(2) Cœl. Aurel. de Chronicis, lib. ii. c. 7. Acut. lib. ii. c. 39.

(3) *Revolutions de Science Medicale*.

Among the disciples and immediate followers of Asclepiades was Cassius Iatrosophista, who left behind him several works on anatomical and surgical subjects.<sup>(1)</sup> It is only necessary to mention regarding these, that, in one of the latter, he distinctly accounts for wounds on the one side of the head producing paralysis on the other, from the decussation of the nerves; a strong proof, as Portal observes, that he was not only a good anatomist, but an observant practitioner.<sup>(2)</sup>

Asclepiades was succeeded in his popularity at Rome by Themison, a native of Laodicea, the founder of a new sect denominated the Methodic, which acquired extensive reputation, and divided medical opinion with the dogmatists and empirics.

Rectifying the principles of his master Asclepiades, he introduced greater precision into his system, and chalked out a new route between the empirical and dogmatic schools.<sup>(3)</sup>

This system was based on the analogies and symptoms common to most diseases, and aimed at a simplification of physic, greater indeed than is allowed by the indications of malady. He ranged all diseases under three great heads; the first class originating

(1) *Naturales et Medicales quæstiones circa hominis naturam, et morbos aliquot, Tiguri, cum catalogo medicamentorum simplicium quæ pestilentia veneno adversantur. Græco-Latine, Lutetiæ, 1541. De Animalibus Quæstiones Medicales. Parisiis, 1541.*

(2) "Cassius étoit aussi grand Anatomiste qu'il étoit bon Praticien. Histoire de l'Anatomie, &c. t. i. c. 7.

(3) "C'est pourquoi," observes Sprengel, "les methodistes n'embrassent jamais ni le dogmatisme ni l'empirisme." Histoire, t. ii. p. 20.

in constriction of fibre, and the second in relaxation ; the third was merely a mixture of these two states.

In the management of the first class he employed laxatives ; the second required a directly opposite treatment ; and for the cure of the mixed class, first the one and then the other was necessary.<sup>(1)</sup> In fact, this third form of disease was nothing more or less than a refuge for all varieties of morbidity, that could not be conveniently labelled under either of the other two divisions ; for, if this mixed class mean any thing, it must, as Cabanis remarks,<sup>(2)</sup> imply either an inequality of tone in the different organs, or an irregular distribution of the vital power, phenomena characterizing almost every shape and variety of human disease ; there being no malady in which a perfect equilibrium is sustained, alike in the tone of the different organs, the exercise of life, and the sensibility of the system. Accordingly, it is quite evident, that the two other classifications of disease are not only very limited in their application to nosology, but indeed of little practical value.

The great aim of Themison appears to have been the simplification of medical practice, by reducing its principles to a few general points of consideration, level to every capacity ; and by discarding all the abstruse metaphysical speculations and physiological wranglings of the dogmatists. He wished, however, to keep the particular states of the body sufficiently

(1) *Vide* Cæli. Aureliani. de Acut. lib. iii. De Chron. lib. ii. Galen, de Compos. Medicam. sec. loca, lib. i.

(2) *Revolutions de Science Medicale.*

in view, to prevent his system being identified with that of the empirics. He advised a diligent examination and comparison of symptoms, together with all the varied indications which these presented. Notwithstanding the cutting query of the satirist,

“ Quot Themison ægros autumnno occiderit uno,” (1)

the popularity of his practice was no mean proof of its success. Indeed we have every reason to believe, that, under his own auspices, that was excellent; whatever diversity of opinion may be entertained of his theories.<sup>(2)</sup>

Taking advantage of the reputation which had accrued to Themison, from his endeavours to remove the mystifications of medicine, Thessalus, a person of low birth and limited education, whose obsequiousness was only equalled by his effrontery, contrived gradually to worm himself into notice;<sup>(3)</sup> and when his success was so considerable as to entitle his opinion to some share of authority, he set about condemning alike the medical theories and prescriptions of all his predecessors.<sup>(4)</sup>

The only peculiarity of the *ratio medendi* substituted by this clever quack, was in the attempt to produce an entire change in the system, which he denominated *metasyncrisis*. The fact, however, was, that his doctrines were a mere undigested melange

(1) Juvenal. Satir. lib. ii.

(2) For an excellent account of the theories and practice of Themison, see Le Clerc, *Histoire*, s. p. lib. iv. c. 1.

(3) Galen de *Diebus Criticis*, lib. i. *Meth. Med.* lib. i.

(4) Plin. lib. xxix. c. 1.



of those attributable to Asclepiades and Themison. From the one he borrowed his atoms and pores; from the other his constriction and relaxation, stirring the hodge-podge together with the ladle of mysticism.

Shortly after the time of Themison, Musa, a freed-man of Augustus, acquired some credit for a cure wrought on that Emperor, by means of the cold bath.<sup>(1)</sup> In consideration of this service he was knighted, and the Roman senate decreed a statue in brass.<sup>(2)</sup> He introduced the flesh of vipers into use as a remedy in leprous sores and malignant ulcers; and added lettuce, endive, and succory, to the *materia medica*.<sup>(3)</sup> He also invented several medical preparations which bore his name, and were for a long time in great repute.<sup>(4)</sup>

The celebrity of the methodic school was sustained by several succeeding physicians of great eminence, more especially by Soranus and Cælius Aurelianus.

The former was a native of Ephesus, who studied at Alexandria, and came to Rome, where he practised with high reputation under Trajan and Adrian.<sup>(5)</sup> Although his writings have perished, the circumstance is less to be regretted, since, probably, their

(1) Sueton. Vit. August. c. 81. Plin. lib. xxix. c. 1.

(2) Ackermann, Prolus. de Ant. Musa. vi. p. 15.

(3) Plin. lib. xix. c. 8.

(4) Galen de Composit. Medicam. lib. iii. "Son frere Euphorbe," says Sprengel, "medecin du Roi Juba, a donné son nom à un genre de plantes *Euphorbia*. (Plin. lib. xxv.) Histoire, tom. ii. p. 23.

(5) Suldas, t. iiii. p. 354.



most valuable parts are those recorded by Cælius Aurelianus, whose work, as exhibiting full and correct views of ancient theory and practice,—especially those of the methodic school,—is certainly one of the most valuable which has come down to posterity. We there find that Sorannus distinguished himself by applying the principles of his predecessors to successful practice.<sup>(1)</sup> Like them he rejected the use of purgatives, on the ground of their indiscriminately evacuating the humours, whether healthy or depraved.

Cælius Aurelianus, however, may be considered the great literary champion of the methodics, for without him we could not have formed a correct idea of their system. Some have supposed that his writings are little more than a translation of Soranus; but many passages could be cited to shew that this is not the case, as he frequently dissents from the opinions of that author, and offers his reasons for so doing. There can be little doubt that this supposition originated in the circumstance of both having adopted the same grand medical principles; and from the consequent strong analogy between their modes of thinking, reasoning, and practice. Be this as it may, his work is invaluable from the variety of its curious and useful information.<sup>(2)</sup> Except for his commemoration, we would assuredly have lost all traces of many of his predecessors and cotempo-

(1) Cæl. Aurelian. Acut. lib. iii. c. 11. Oribas. Collect. lib. xxiv. c. 31.

(2) Baglivi, Prax. Medic. lib. ii. c. 8. Cassiodor. de Institut. Divin. Liter. c. 31. Grainger (De Febre Anomalia Batav.) prefers Cælius both to Galen and Aretæus.

raries,—the original, peculiar, and valuable parts of whose theories and practice, have alone been saved by fortunate incorporation with his own. To him solely, as we have remarked, do we owe an entire exposition of the principles of the methodics,—a sect which, for a long series<sup>1</sup> of years, bore nearly a despotic sway over medical doctrine, and whose theory, although grievously deficient, not only in fundamental truth, but in practical utility, was not only a second time coaxed into popularity by Prosper Alpinus in the sixteenth century, but yet a third time by Baglivi in the eighteenth.

Discarding all theory from his discussions, Cælius attached importance only to the indications of cure that symptoms afforded; and, attending to the results, he wisely kept from intermeddling with the hidden properties of matter.<sup>(1)</sup> A correct observer of facts, his aim was but to manage them, and use such means as to turn their succession to a favourable issue. His plan was to trust for the identification of a disease to the development of the symptoms; and his curative means were so simple, as to have been thought by many to have been deficient in activity. He had little reliance in what have been termed specific medicines, having in by far the greater number of instances been able to trace their supposed good effects to ignorant prejudice, either on the part of the physician or the patient. His

(1) Sed neque secundum has differentias differens erit adhibenda curatio. Una est enim atque eadem passio, ex qualibet veniens causâ, quæ una atque eadem indigeat curatione. Cæl. Aurel. Acut. lib. ii. c. 13.

chief aim was the regulation and modification of symptoms by diet and regimen; and from all this, it may be supposed that his principle was to reduce medical science to the utmost philosophical simplicity.<sup>(1)</sup> Like all systematists, however, he was fonder of adapting facts to his theory, than his theory to facts; and disallowed the use of purgatives, because irreconcilable to the doctrine of relaxation and constriction. For the same reason he abandoned general bloodletting; but as cupping and leeching might be supposed to act in removing local constriction, their employment was, on that account, recognised as useful.<sup>(2)</sup>

He followed Asclepiades in the division of diseases into acute and chronic. His remedies were also arranged under two grand heads, their power of counteracting constriction, or its opposite state.

It is much to be regretted that the work of Cælius Aurelianus, which for its value is almost preferred by Grainger and Sprengel to those of Galen or Aretæus, should have been written in a barbarous style, and in impure Greek. Being a native of Sicca in Numidia, it is probable that he was deprived of those early advantages of education, which would no doubt have much enhanced the excellence of his writings in a literary point of view.

Nearly cotemporary with Juvenal the poet, lived Archigenes the Syrian, who, according to some accounts, was at one time physician to Philip, king of

(1) Gaubius, Institut. Pathol. Med. p. 60.

(2) De Acut. lib. I. c. 9.

that country. Settling in Rome towards the commencement of the second century of the Christian era, he soon distinguished himself both in medicine and surgery. His writings, which were principally confined to the latter subject, are respectfully taken notice of by Galen. His works themselves are lost, but a variety of fragments have been preserved by *Ætius*.<sup>(1)</sup>

Pliny has remarked the fact, and it is a curious one, that, down to this period, Rome had not produced a single medical practitioner,—all that we have commemorated, and many more whose names are preserved, having been foreigners.

Before proceeding to the celebrated work of *Celsus*, the first Roman whose medical writings have been handed down to us, it is necessary to give a few preliminary observations on the various theories which then divided the judgment of physicians.

(1) *Vide* the titles of his various works in Portal's *Histoire*, t. i. c. 7.

## CHAPTER VI.

PNEUMATICS AND ECLECTICS—A. C. CELSUS—ARETÆUS,  
AND OTHERS.

THEMISON struck out a new path for himself, between that of the dogmatists and that of the empirics; and those who followed in his footsteps received the appellation of the Methodic School.

He differed from the empirics in enjoining strict attention to the state of the animal machine; and from the dogmatists in simplifying the theory of disease, and in his attention to existing symptoms, without much anxiety regarding remote and hidden causes.

Themison acknowledged the division of all diseases into acute and chronic, and that these arose either from constriction or relaxation. The action of all remedies was also classified under one of two heads—those which were useful in the former state, and those that were so in the latter.

In the course of years, when the methodic school was at the height of its reputation, alterations and innovations were introduced into it by various disciples, and more especially by Athenæus, a Sicilian

physician ; who practised at Rome. From him sprang a doctrine, the followers of which were denominated Pneumatics, from their acknowledgment of the agency of a certain principle, active and immaterial in its nature, which they termed *Pneuma* or Spirit, and which, according to them, determined the states of health and disease.

This doctrine was by no means new. We may remember that Plato founded his theory on the operation of an aerial cause ; and that Aristotle attempted to explain the means by which it introduced itself into the sanguiferous system. The stoics still more fully developed this hypothesis, and Erasistratus attaches great importance to its operation, whether in sustaining health, or producing disease.

By their acknowledgment of the operation of this fifth elementary principle, a great body of physicians separated themselves from the methodics, and took upon themselves the appellation of Pneumatics. We must, however, confess, that it is a little puzzling to point out the minute and trifling differences of speculative opinion, by which they claim to be regarded as a separate sect. They acknowledged the Aristotelian doctrine of the existence of germs in the system ; and maintained that matter and form were separate modes of existence, not residing in the same individual body. From the supposed influence of the *pneuma* on the pulse, they watched and noted its variations with great care, and argued upon them with dialectic subtlety,—considering its fulness as a certain indication of the force developed

by the vital power,—in other words, the energy of the constitution.

Separating himself from the over-refinements and unnecessary niceties of Athenæus, Agathinus of Sparta, one of his disciples, came to the moderate, but truly philosophical conclusion, that truth was sometimes with one school, and sometimes with another; consequently, that it was the duty of the practitioner to adhere to no system, but to seek it wherever it could be found, and to pick out the valuable portions of every hypothesis, without a blind prostration to any. Hence arose the Eclectics,—the peculiarities of whose practice and doctrine may be best noted in the account we are about to give of several of their most distinguished associates,—more especially of Celsus and Aretæus.

It is a matter of regret, that the personal history of Aurelius Cornelius Celsus should be enveloped in an almost complete and hopeless obscurity; as every student of the healing art must doubtless be willing to learn something regarding the life and fortunes of a man whose writings contain such a fund of valuable information, and who is one of the

“ *rari natantes in gurgite vasto* ”

among medical authors, the elegance of whose language, and the purity of whose style, have entitled him to take a high place among the classics. Where he received his education is doubtful; his works are a proof that it must have been a thorough and excel-



lent one.<sup>(1)</sup> He lived in the reigns of Tiberius, Caligula, Claudius, and Nero, in the first century of Christianity, and about a hundred and fifty years before Galen.<sup>(2)</sup>

It has been thought by Bianconi, that Celsus acted as secretary to Tiberius, and that he accompanied that emperor in his expedition to the east; and Sprengel is inclined to countenance that opinion,<sup>(3)</sup> from the circumstance of his being mentioned by Horace,<sup>(4)</sup> as employed in making collections from the works contained in the royal library on the Palatine Mount. There are some hints and incidents that lead us also to believe, that he was an intimate personal friend of the author of the *Metamorphoses*.<sup>(5)</sup>

The medical authorities, on which Celsus seems to have placed the greatest reliance, were Hippocrates and Asclepiades, more especially the latter, whom on all occasions he looks up to with a regard bordering on reverence. Yet although we have in the pages of Celsus a complete and masterly digest of all the true medical and surgical knowledge of his times, it would be difficult to establish the fact of his ever having himself actually practised as a phy-

(1) Morgagni, *Epist. de Celso*, p. 476.

(2) Portal, *Histoire*, tom. prem. chap. viii. p. 66.

(3) Bianconi, p. 140; Sprengel, vol. ii. p. 26.

(4) Horat. lib. i. ep. 3. *Ad. Julium Horum*, v. 15.

“ Quid mihi Celsus agit? monitus multumque monendus,  
Privatas ut quærat opes, et tangere vitet  
Scripta, Palatinus quæcunque recepit Apollo.”

(5) Bianconi, p. 131.



sician. Indeed, the way he is spoken of by Pliny leads to a different conclusion, and would incline us to believe that he only cultivated medicine, as a department of natural philosophy.<sup>(1)</sup> Others have supposed, with much probability, that his treatise *De Re Medica*, only formed a division of some grand Roman work on general knowledge.<sup>(2)</sup> The minutely accurate description he has given of several parts of the human body, assuredly indicate that his knowledge was more than mere doctrinal, and that he must have practised or witnessed human dissection; but although he has detailed several operations in surgery, with a distinct reference to their cause, we do not know whether he himself ever really performed them.<sup>(3)</sup>

Be this as it may, the legacy he has bequeathed to the medical world is of the utmost value. He has been called the Latin Hippocrates for the quantity of his sound, practical information, and the Cicero of physicians for the elegance of his style.<sup>(4)</sup> Besides his celebrated work on medicine, Celsus was the author of a treatise relating to agriculture, and of other writings in various departments of literature, which are now lost.<sup>(5)</sup>

The practical recommendations of Celsus bear a

(1) Plin. lib. xxix.

(2) Sprengel, tom. ii. p. 25.—“ Le livre formait qu' une faible partie d'un grand ouvrage encyclopedique.”—Histoire, Sec. Cinquieme.

(3) Morgagni, p. 501.

(4) Lionardo di Capoa nel suo parere intorno la Medicina. Vanderlinden de Scriptis Med.

(5) Columella de Re Rustica, lib. i. c. 1. Quintiliana Institutiones, lib. iii. c. 2.

striking affinity to those of the great physician of Cos. His faith in the efforts of nature to regulate symptoms, and bring back the system from a state of disease to health, is equally great ; and his mode of management is characterized by the same simplicity. In ordinary cases, he trusts almost every thing to dietetics, air, and exercise ; but when circumstances are urgent, he recommends a free use of the lancet, together with purgatives, of the gentler kind. The more drastic were reserved only for cases of extreme danger.

His arrangement of fevers indicates very considerable ingenuity, and his descriptions of them are so graphic and accurate, that the varieties may still be easily traced in actual practice. Indeed, they are such as only triflingly to differ from what are now regarded as the most nosologically faithful, in the pages of Sauvages, Cullen, and Mason Good. Like Asclepiades, he disregarded the Hippocratican doctrine of critical days ; and like him also trusted much to Nature, as we have just observed, for gradually restoring the balance of health.

Although, of the eight books of Celsus, four are dedicated to surgery, yet throughout all, a number of facts are adduced, which throw light over the healing art in general. Most of his opinions on the principles which ought to regulate clinical medicine are taken from Hippocrates, with a little admixture of Asclepiades and Themison.

Of his surgical operations and remarks, many are yet far from being obsolete, and impress us with a

high idea of his ingenuity and judgment. His mode of performing lithotomy has been in recent times warmly defended by Heister,<sup>(1)</sup> especially as applicable to children. He describes the operation for the cataract by depression, and the method of forming an artificial pupil. The whole of his account of injuries of the head is admirable, and evinces wonderful tact and discrimination. His rules for distinguishing fracture, and for the application of the trepan have been highly enlogised; nor is what he says about *contre-coups* less accurate.<sup>(2)</sup> He is the first who has remarked that there may be rupture of a vessel within the cranium, without fracture or depression.<sup>(3)</sup> It would be endless, however, to particularize; whoever wishes to know the exact state of surgical knowledge in the world, at the time of the Cæsars, may turn to the pages of Celsus with the hopes of a gratification, which will not be disappointed.<sup>(4)</sup>

(1) Heister, de Lithotomiæ Celsianæ præstantia et usu. Helms. 1744. In this work, Heister attempts to prove, that the methods of Cheselden and of Morand are no other than that of Celsus improved. *Vide* Portal, Histoire, tom. i. p. 64.

(2) "Solet etiam evenire ut altera parte fuerit ictus et os altera siderit, itaque si graviter aliquis percussus est, si mala indicia subsecuta sunt, neque ea parte qua cutis discussa est rima reperitur, non incommodum est parte altera considerare num quis locus mollior sit, et transeat, eumque aperire si quidem ibi fissum os reperitur."—De Re Medica, lib. viii. cap. 4.

(3) "Raro, sed aliquando tamen evenit ut os quidem totum integrum maneat, intus aliquid vero ex ictu vena aliqua in cerebri membrana rupta sanguinem mittat, atque ibi concretus magnos dolores moveat, oculosque obcæcet."—Lib. viii. c. 4.

(4) The works of Celsus have gone through innumerable editions. Among the older ones, the three most valuable are the *Aldine*, printed at Venice, in 8vo, 1528; the *Elzevir*, Leyden, in 12mo, 1657; and the *Rotterdam*, with the notes of Isaac Casaubon and others, in 8vo, 1750. *Penes me*, is a reprint of the last, Almeloveen's, (Padua, 1722) an extremely beautiful book.

We cannot turn from the consideration of Celsus, without re-iterating the acknowledgement of our warm admiration of his excellencies as an author. In style and language, he is equalled by very few of the ancients; and in these, as well as in arrangement, he will ever remain a model to every succeeding writer on medical subjects. To his credit be it also confessed, that, though an early adherent of the Methodic school, his convictions were at all times open to truth, whether to be found in Hippocrates or Asclepiades; and that wherever a valuable observation was to be found, he adopted it, without hesitation or reference to system. Celsus is hence a pattern of the pure eclectic, which, taken in this point of view, is the sect to be embraced by every physician, who considers the abatement of human suffering as the grand aim and object of his profession.

In the uncertainty of chronology we come next to the mention of Aretæus, another of the most distinguished medical writers of the ancient world. His personal history is wrapt in still greater obscurity, if that is possible, than even that of Celsus himself.

Aretæus was born in Cappadocia, and practised at Rome, probably about the time of Domitian, as he mentions the imperial physicians as the Archiatrons,—a title which they did not assume anterior to that reign.<sup>(1)</sup> To add to the difficulty of determining the time at which Aretæus lived, he has made no mention of any cotemporary physician, nor is he

(1) Aretæus, *De Curat. Acut. lib. ii. c. 5.*

taken notice of by any, save by Ætius and Dioscorides at a subsequent period.<sup>(1)</sup> Indeed, the fact of his having practised in Italy at all, seems principally to rest on the simple circumstance of his having occasionally referred to the wines of Falernum and other districts of that country.<sup>(2)</sup> His having written in the Ionian dialect leads to no conclusion, according to the learned Sprengel, as to the precise time at which he appeared; since not only Galen himself has frequently made use of it, but also Arrian, and many other authors of much more recent ages.<sup>(3)</sup>

Aretæus appears to have been educated according to the principles of the Pneumatic School; but afterwards, in the spirit of philosophical liberalism, to have become an Eclectic. He recognises three constituent parts of the system,—the solids, the fluids, and the pneuma or spirit; the proper admixture of which constitutes health. With Aristotle and the Stoics, he supposes that the aerial principle passes by the lungs to the heart, and from the heart to the arteries; and that by its qualities is determined the nature of all maladies.

If we keep out of view some of the fanciful peculiarities of the sect he had embraced in youth, and

(1) Ej. Euphorist, p. 112. *Vide* Kuhn, De Dubia Aretæi Ætate; Weigel; Aretæus de Pulmonum Inflammatione.

(2) “ Il suffirait,” says Sprengel, “ pour prouver qu’il vivait en Italie, de dire qu’on trouve cités dans ses écrits les vins de Falerne et de plusieurs autres contrées de l’Italie.” (Curat. Acut. lib. ii. p. 101.) Hist. tom. ii. 82.

(3) Those who are curious in chronological matters, may further consult the ingenious dissertation of Wlggan, prefixed to Boerhaave’s admirable edition of Aretæus; and also the learned remarks of Ackermann, in the Bibliotheca Greca of Fabricius, vol. iv. p. 703.

reluctantly adhered to in maturer life, Aretæus may be considered as one of the most accurate and observant practitioners of which antiquity can boast. Free from theoretical assumption, and the subtlety of dialectics, all his descriptions of disease bear the impress of personal knowledge. He evidently has seen what he delineates, and hence his observations are of redoubled value. In his discrimination of symptoms, in his prognosis of the probable results of disease, and in his acquaintance not only with the varieties of the human constitution, but with the effects of climate and situation on health, Aretæus exhibits those high qualities which characterize the philosophical observer. Indeed his practice appears to have been infinitely more simple and just than that of almost any other of the ancient physicians with whom we are acquainted.

He prescribed few remedies, and those only upon very evident indications of utility; following rigidly, in this respect, the examples of Hippocrates and Asclepiades. He had great faith in emetics, not only as evacnants, but as exerting a peculiar sanative influence over the whole nervous system;<sup>(1)</sup> and recommended bloodletting in all cases of an inflammatory tendency, always opening the vein, after the example of Archigenes, on the side opposite to that affected; from the belief of its superior efficacy, when extracted from a part removed from the seat of disease.<sup>(2)</sup>

(1) Aretæus, de Cur. Acut. lib. i. c. 4.

(2) Idem, lib. i. cap. 10.



Like the Methodics, Aretæus distinguished diseases into acute and chronic. In cases of the former description, his favourite purgatives were elaterium and hellebore; and in almost all varieties of the latter, he rested great faith on the virtues of castor. It is worthy of remark, that, according to Le Clerc, Aretæus was the first who made use of blisters; prescribing cantharides for that purpose.<sup>(1)</sup>

Like Celsus, he prefaces his account of diseases by an anatomical description of the parts concerned, and by these it will be seen that his anatomical knowledge was neither very profound nor exact. Indeed this could not well be the case, so far as personal opportunities went, when we remember that human dissection was prohibited in his time, under the heaviest penalties. Nevertheless, he had the sound penetration to regard anatomy as the only legitimate basis on which medical science could rest.<sup>(2)</sup>

Boerhaave, as might have been expected, was an enthusiastic admirer of Aretæus, and has given a beautiful edition of his works, incorporating the useful commentaries of Petit.<sup>(3)</sup> Indeed, such an author

(1) Le Clerc, Hist. Med. p. 2. liv. iv. sect. 2. chap. 3.

(2) *L'anatomie d'Arétée n'est pas fort exacte, cela n'est pas suprenant, puisque de son temps il étoit défendu sous de grandes peines de dissequer des cadavres humains.* Portal. Hist. de l'Anat. tom. i. p. 63.

(3) "Aretei Cappadocis de signis acutorum et diuturnorum morborum libri quatuor; de curatione acutorum et diuturnorum morborum, libri quatuor, cum commentariis integris Petri Petiti, Medici Parisiensis, atque clarissimi Johannis Wigani doctis et laboriosis notis, et celeberrimi Mettairii opusculis in eundem, tandem que eruditissimi et celebratissimi Danielis Wilhelmi Trilleri observationibus et emendatis Editionem curavit Hermannus Boerhaave, Lugdun. Batav. 1735." Such is the title-page of

as Aretæus deserves every attention which can be paid by the medical student, who is anxious to find out a model for pathological search and accuracy. He did not allow the prejudices of the schools to trammel his judgments; and he described diseases as he observed them, without reference to principles or system.

As a practitioner, Aretæus has been blamed by some for too much boldness and decision; but if, sometimes, in his zeal to bring about a favourable crisis, he might overstep the boundaries of a prudential caution, be it remembered, that his enthusiasm was kindled at the shrine of science, and had for its object the noblest of motives, in the welfare of his fellow-creatures.

Before concluding this chapter, it is but proper to mention, however cursorily, a few of the more distinguished disciples of the Pneumatic and Eclectic Schools.

Of Cassius Iatrosophista we have already spoken, without any particular reference to sect, but as a luminous writer, principally on surgery. In his medical notions, he sometimes followed the Pneumatists, and sometimes the Methodics. In relation to the former, he attributed asphyxia to an exhaustion of the pneuma contained in the arteries; and the alteration of the pulse in fever, to the increased heat attenuating the pneuma, augmenting its mobility, and

Boerhaave's edition. What flocks of "illustrious obscure" a man of original mind brings about him in the shape of commentators! Where the carcase is, there are the vultures gathered together.



so quickening the pulsation of the arteries. On the same principle, he defines blushing to be an increased tendency of the *pneuma* to the arteries of the face, and paleness to arise from its receding to the more internal parts.<sup>(1)</sup>

Herodotus, a protegee of Agathinus, who practised at Rome in the reign of Trajan, and who was a zealous partizan of the Pneumatic School, enriched general therapeutics and dietetics by a variety of useful observations.<sup>(2)</sup> He strongly recommended gymnastic exercises, especially riding on horseback, even in acute diseases;<sup>(3)</sup> and had great faith in sudorifics, from the idea that they freed the *pneuma*, or vital principle, from every thing heterogeneous. He left a very excellent description of the cutaneous eruptions that accompany acute diseases.<sup>(4)</sup>

Magnus of Ephesus, the royal physician at Rome in the time of Galen, although a disciple of the Pneumatico-eclectic School, wrote very sensibly on the medical theories of Archigenes.<sup>(5)</sup> Among his peculiarities, he places the seat of hydrophobia in the stomach and diaphragm,<sup>(6)</sup> and defines the pulse to be a swelling and subsiding of the arteries.<sup>(7)</sup>

Heliodorus, the celebrated physician of the Emperor Trajan,<sup>(8)</sup> has left some admirable observations

(1) Cassii Iatrosophistæ naturales et medicinales quæstiones. Ed. Conr. Gessner. Tigur. 15562. p. 49. p. 46.

(2) Galen, de Diff. Puls. lib. iv. p. 51.

(3) Oribas. Collect. lib. vi. c. 28—36.

(4) Aët. Tetr. iii. Serm. i. c. 2.

(5) Galen, de Diff. Puls. lib. iil. p. 32.

(6) Cælius Aurelianus, lib. iii. cap. 4.

(7) Galen, de Diff. Puls. lib. iv. p. 51.

(8) Juvenal, Sat. vi. v. 372.

on injuries of the head ;<sup>(1)</sup> and Posidonius, a physician of the time of Valens, is lauded by Ætius as an observant and accurate pathologist.<sup>(2)</sup>

The last whom we shall particularize is Antyllus, a cotemporary of Posidonius, who contributed a good deal to the progress of surgery and therapeutics. Although his works themselves are lost, many fragments of value are scattered through the ancient writers, which have of late years been carefully collected by Kurt Sprengel, and printed in a volume, with curious annotations.<sup>(3)</sup> His observations on baths, and on the use of drastic purgatives, are extremely sensible ; nor have any of the ancients excelled him in the accuracy of his directions for preparing plasters and unguents.

The surgical remarks of Antyllus are bold and acute. He recommends bronchotomy in threatened suffocation from sore throat ; and in particular diseases to draw blood from the arteries, without dreading excess of hæmorrhage, as that may be obviated by complete division.<sup>(4)</sup> It is also worthy of remark, that he speaks of the operation for cataract by extraction, which he advises to be done when small ; as when large, the humours of the eye may be also evacuated. His cure for hydrocele was by the method of incision.

(1) Nicet. Collect. p. 85.

(2) Æt. Tetr. ii. Sermon. ii. c. 2. His idea of night-mare is quaint and curious. " Qui incubus appellatur, non est demon, sed magis præludium et præmium morbi comitialis, aut insanie aut syderationis."

(3) Antylli, veteris chirurgi, Τα λείψανα, præside Curtio Sprengel. ventilanda exhibet Panagiota Nicolaides. 4to. Halle, 1799.

(4) Oribas. Coll. lib. vii. c. 14. Rhaz. Contin. lib. ii. Pauli. lib. vi. c. 33.

## CHAPTER VII.

RUFUS—PEDACIUS DIOSCORIDES—THE ELDER PLINY,  
AND OTHERS.

It would be inconsistent with the plan of these outlines of early medical history, to mention all the names that have been handed down to us. Such a task would be alike tedious and unprofitable; nor is it the mere celebrated practitioner who demands our attention in such a design; it is only when alterations are introduced, or new theories suggested, that the necessity arises of shewing in what points of view these differ from the practices and opinions formerly acted on. Before, therefore, entering upon the consideration of the medical writings of the illustrious Galen—the most influential author of all antiquity—we shall dedicate a brief chapter to some of his yet unmentioned predecessors and contemporaries.

Of these no one has greater claims to our notice than Rufus the Ephesian, who, beyond all doubt, lived in the reign of Trajan,<sup>(1)</sup> and devoted himself principally to anatomy; although, from the prejudices

(1) Suidas, vol. iii. p. 266.

of the times, he was compelled to restrict himself to the dissection of the lower animals. Of his writings only two tractates remain; the one containing the Greek names of the different parts of the body,<sup>(1)</sup> the other on the diseases<sup>(2)</sup> of the kidneys and bladder. His aim appears to have been to convey a correct general idea of anatomy, by putting an end to the uncertainties which constantly involve the reader of ancient medical writings, from the varieties of appellation bestowed on the same structure.

In his anatomical treatise he mentions the recurrent nerve, which had then been newly discovered; and, in the same, makes the remark, that pressure on the carotid arteries had been observed to take away the voice. He points out, however, the true cause of this fact, by shewing that it does not arise from pressure on the arteries, but on the nerves, which are contiguous to them.<sup>(3)</sup>

Some fragmental portions of Rufus are preserved in Ætius Armidenus. Galen speaks highly of one of his works on melancholy, which is lost.<sup>(4)</sup> After the fashion of the times, he wrote a piece in hexa-

(1) *Appellationes Partium Humani Corporis*. Junio Paulo Crasso interprete. Venetiis, 1552. 4to.

(2) *De Vesicæ, Renumque Morbis, &c.* Græce. Parisiis, 1554. To this little book is appended the Treatise of Soranus De Utero.

(3) Rufus avoit remarqué que si on pressoit fortement sur les arteres carotides, l'animal s'assoupissoit et perdoit la voix : non par la compression de ces arteres, comme le croyoient les anciens; mais parceque *les nerfs qui sont contigus aux mêmes arteres étoient comprimés*. Portal, Histoire, tom. i. p. 74.

(4) Galen de Atra Bile, p. 357.

meters on the virtues of particular plants, some relics of which have come down to us.<sup>(1)</sup>

Of Marinus, whom Galen designates as the restorer of anatomy, and who was one of the most celebrated cultivators of the art that antiquity can boast of, we know little, and his works themselves are lost. He lived under Nero, and was the preceptor of Quintus.

Marinus is said to have written elaborately on the muscles,<sup>(2)</sup> as also on the glandular system. Besides making some new arrangements in neurology, he discovered and described the mesenteric glands.<sup>(3)</sup>

Of Scribonius Largus and Andromachus it is only necessary to say, that the former accompanied the Emperor Claudius into Britain, and wrote a work in somewhat barbarous Latin, consisting of prescriptions and nostrums; and that the latter was physician to the Emperor Nero, and the first whom we find mentioned in history under the title of Archiatron.<sup>(4)</sup> He invented the Theriaca which bears his name, and which was intended as a universal panacea.<sup>(5)</sup>

(1) Galen *De Compositione Medicam.* lib. i. p. 357. et *De Facultate Simplic. Med.* lib. vi.

(2) Douglas, *Bibliog. Anatom.*

(2) Portal, *Histoire*, tome i. p. 73.

(4) Much learned discussion has taken place as to the exact meaning of the term Archiatron. Setting aside a number of plausibilities, we think the title was applied as a mark of distinctive eminence to the principal physician of the Court. Le Clerc, among others, has entered into an elaborate discussion on the subject, to which we refer the reader.

(5) Galen, *De Theriac.* *Ad Pison*, p. 470.

The only entire *materia medica*, supposed to be written in these times, which is yet extant, is that of Pedacius Dioscorides de Anazarba. We have no direct information, however, as to the age in which he flourished. He travelled with the Roman armies, attending to objects of natural curiosity, and examining for himself whatever had been described by his predecessors. Although his style is far from being pure, his work rose into great reputation, and for many ages was the principal manual of *materia medica* and botany in almost every portion of the civilized world. Among the Moors, Turks, and other half refined nations, it still maintains its supremacy, to this day over every other work on the same subjects.<sup>(1)</sup>

Although the plants, in the book on *materia medica*, are for the most part arranged in the natural order, there is an entire absence of scientific method. In recurring to the specimens, we find some of them, however, admirably described and characterized; and might particularly refer to the opium, squill, assa-fœtida, and ammonia. The castor oil was not unknown; although he only mentions its use as recommended for an external application. Dioscorides was one of the first to direct attention to the mercantile adulteration of drugs, and has shewn considerable ingenuity in pointing out the methods by which detection may be best made.

(1) Shaw's Travels In Barbary and the Levant, 4to. p. 263. Toderini *Litterature des Turcs*, p. 122.

Having comprehended Aristotle in our general survey of Medicine, on account of his anatomical knowledge and his physiological descriptions, although his researches were less those of the physician than of the philosopher, it would be unjust to pass over altogether the Elder Pliny, whose labours so much benefited *Materia Medica* and Pharmacy.

Pliny the Elder was born at Como,<sup>(1)</sup> on the lake of the same name, and was a soldier in the Roman armies, with which he made many campaigns, during which he enjoyed an opportunity of indulging his zeal for researches in natural philosophy, and was for some time lieutenant of Spain. After his return, he applied himself sedulously to the study of jurisprudence, until again called into active life, as commander of the fleet at Messina. In his anxiety as a philosopher, to inspect the nature of the lava during an eruption of Vesuvius, he approached too near the crater, and was suffocated by the noxious vapours, in the sixty-ninth year of the Christian era.

(1) Although we have given precedence to the plea of Como in the text, it is necessary to remind the reader that Verona also puts in a claim to the like distinction, and adduces the expression "*conterraneum suum*," which Pliny himself applies to the adjacent country, as conclusive in her favour. Suetonius, however, Cigalini, and others, have decided for Como. *Vide Cigalini de Vera Plinii Patria, et Disquisitiones Plinianæ.* A della Torre di Rezzonico, t. i. ii.—To these we may add, by implication, the testimony of Mr Rogers.—

"I love to muse along the Larian Lake,  
Under the shore—though not to visit Pliny,  
To catch him musing on his plane-tree walk,  
Or angling from his window."

ITALY, p. 33.—1830.



Were we to enter into the general merits of this great man, it would be difficult to confine our remarks within our prescribed limits; as his was one of those gigantic minds, that are only now and then created as phenomena. Considered merely in reference to medicine, the subject may be discussed in a few words.

As a botanist, the descriptions of Pliny are concise, and occasionally far from being either complete or satisfactory; nor is his nomenclature by any means lucid, for he seems to have confused himself, from the multiplicity of sources whence he has deduced his information. In considering the vegetable kingdom, he has confined himself almost entirely to their economical and medical properties of plants.

The Natural History of Pliny, taken as a whole, may be justly regarded as one of the most stupendous achievements of human learning, industry, and genius.<sup>(1)</sup> Independently of the History of Animated Nature, of Plants, and of Minerals, it comprehends the cosmogony of the world, and an account of all the liberal and mechanical arts. In fact, it is a kind of cyclopædia of human knowledge, not less remarkable for the elevation of sentiment that pervades it, than for the splendour of style in which it is written. Although the lapse of eighteen centuries have altered the value of some of its parts, and subsequent investigation let in a more certain light on others, its merits as a work of

(1) For the immensity of the researches of the Elder Pliny see the statement of the Younger, lib. iii. ep. 5.



literature and science are of the first order. Buffon, the highest authority on the subject in modern times, speaks of Pliny with rapturous praise, and almost unqualified admiration, characterizing his writings in the most glowing terms of panegyric.<sup>(1)</sup>

Of Pelops, who deserves mention, as the preceptor of Galen,<sup>(2)</sup> we know very little, and that solely derived from the grateful reminiscences of his pupil. He delivered public prelections on anatomy, and seems to have been a prototype of the late ingenious Dr Barclay, in having the muscles for his hobby. He not only went the length of believing, with Hippocrates, that the brain is the common origin of the veins, but of all the vessels of the body together.<sup>(2)</sup>

Stratonicus of Pergamus was also another of the masters of Galen. All that we know regarding him is, that he entertained some peculiar physiological notions, into the faith of which he initiated his illustrious scholar.

We have already alluded to the curious fact, that medicine and surgery were among the last of the liberal arts which received countenance and encouragement at Rome. While conquest was extending the limits of its empire, and intellectual illumination rapidly dispersing the shadows of barbarism and superstition, diseases continued to be cured by nostrums, and by religious ceremonials. Indeed, although we have now come down to the second century of the Christian era, we have only met with

(1) *Histoire Naturelle*, Ed. Paris, tom. i. p. 69.

(2) Galen de Muscul. Dissect. in proem.

one great Roman writer on medicine, and have shown that there is every reason to believe that he never practised the art. The fact is, that the pride of the national character made the patricians shrink from the idea of educating any members of their family to professions, from whose exercise money was obtained, not from the public as a body, but from individuals. It was on this account that Rome was for a long period indebted for her physicians, as we have seen, to Greece and Alexandria. When increasing population, riches, and luxury, demanded a larger supply than could be thence obtained, slaves and freedmen educated themselves to supply the want, and of the latter not a few raised themselves to eminence. We have already given two notable examples in Antonius Musa, and in Scribonius Largus.

## CHAPTER VI.

## ON THE LIFE AND WRITINGS OF CLAUDIUS GALEN.

THE writings of Galen having exerted as extensive an influence over medical practice, as those of any individual that ever existed, and that not only in his more immediate times, but for more than a thousand years, it is necessary to consider them with some attention. His erudition was as extensive as his genius was brilliant, and both were united to an industry alike indefatigable and well-directed.

Claudius Galen was born at Pergamus, in Asia Minor, in the 131st year of the Christian era. His father, by profession an architect, is represented to have been a person of high moral character, active habits, and cultivated mind. In his mother,<sup>(1)</sup> although a person of strict virtue and rigid economy, he was by no means so fortunate; but even although she was sometimes too free with her tongue, and occasionally bit the servants, it reflects little credit on the filial piety of her son, that in his writings he

(1) Galen de Dignosc. Animi Morb. p. 357.—De Euchymia et Cacoehymia, p. 352.

has preserved some traits regarding her, which, for both their sakes, had much better been allowed to sink into oblivion.

The penetration of the father soon perceived in his son the seeds of that promise, which time afterwards so gloriously matured. Himself a scholar,<sup>(1)</sup> he bestowed great care on his early education, and initiated him into a knowledge of the principles of the Aristotelian philosophy. He subsequently turned his attention to the doctrines of the Stoics and Epicureans, under a learned Platonist of the name of Caius.

While yet very young, he had made such advances in general knowledge, that he composed a commentary on the dialectics of Chrysippus; and, from his love and eagerness for mathematical demonstration, was for a little time nearly bewildering his judgment in the darkness of Pyrrhonism.<sup>(2)</sup> The light at length, however, shone clearly, and Galen for ever bade adieu to scepticism.

A fortunate whim determined the father to direct the attention of his son to medicine, and he commenced the study of anatomy under Satyrus, a person of ability. By Stratonicus, a dogmatist, and Æschrion, an empiric, he was initiated into the principles of their respective systems.

When young Galen was in his twenty-first year, his excellent father dying, he left Pergamus, to at-

(1) Galen de Different. Puls. lib. ii. p. 22.

(2) De Libr. Propr. 367.

tend the lectures of Pelops, and of the Platonist Albinus at Smyrna. From thence he proceeded to Corinth, where, after for some time studying the philosophical doctrines of Numesianus, who was resident there, he prepared himself for travel, principally with a view of extending his knowledge of natural history.<sup>(1)</sup>

Alexandria being at that time the centre of the scientific world, Galen determined to perfect his anatomical knowledge at that place, and from among his other preceptors particularly singled out Heraclianus, as the one more pre-eminently entitled to his eulogy and gratitude.

At the age of twenty-eight, Galen revisited his native soil, and was entrusted with the charge of the gymnasium, attached to one of the temples of Esculapius.<sup>(2)</sup> While in this somewhat obscure employment, a revolution, which shortly afterwards broke out at Pergamns, fortunately for his fame, compelled him to quit that city, and caused him to bend his eyes on Rome, from the encouragement and patronage held out there to the Greek practitioners of medicine.

Almost immediately after his settlement at Rome, which was in his thirty-fourth year, his accurate anatomical knowledge, and the general success of his practice, drew at once upon him the attention of the

(1) For these particulars of the early studies of Galen, we are indebted for information contained in various parts of his own writings.

(2) Comment. in Hippoc. 2.—In Lib. de Nat. Human.

public and the jealousy of all the Roman physicians. Establishing a splendid reputation, he was induced, by the advice of many of the noble and the learned, more especially of the consul Boethus, and the future emperor Severus, and of the philosophers Eudemus and Alexander of Damascus, to enter on the delivery of a public course of lectures on anatomy, —a task for which he was eminently fitted, both by his knowledge and natural eloquence. So high against him, however, had the tide of professional rancour and malignity ascended, partly, no doubt, from mean and unworthy jealousy of excelling merit, and partly, it is to be feared, from the uncompromising and arbitrary tone which Galen ever maintained to all opposition, that, on the breaking out of a malignant epidemic, he withdrew himself in disgust from the city, and re-embarked for Greece.<sup>(1)</sup>

Yet in his thirty-ninth year, and his thirst for travel and knowledge unabated, he resumed his researches in natural philosophy with great assiduity, principally with reference to medicine; having a desire to see the various articles of the *Materia Medica* in their own proper climes. After visiting the Island of Cyprus, where he witnessed the admirable manner in which the metals were worked, and collected a variety of mineral substances, he returned

(1) In his book *De Libr. Propr.* Galen mentions the circumstance of the hatred of the Roman physicians being in one instance carried to the length of their murdering a Greek practitioner, who had attained great popularity, as also his two assistants.

a second time to Palestine, to examine the bitumen and opobalsamum.<sup>(1)</sup>

Scarcely, however, had one year elapsed, ere he was recalled by the emperor Marcus Aurelius, who was at that time at Aquileia, prosecuting the war against the Marcomanni, and other German nations. After traversing Thrace and Macedonia, he arrived there, and finding that the emperor Lucius Verus had died of the plague, which was depopulating the neighbourhood, he took the road for Rome; where, shortly afterwards, he was appointed physician to the young emperor Commodus,—with whom he justly became a great favourite, as well as with all his court, not only for his splendid professional knowledge, but for his worth and virtues.

That in his declining years, Galen once more returned to his native country, is known; but neither that precise time, nor the year of his death, have been ascertained. From his writings, it is evident that his life extended to the reign of Septimus Severus; and Snidas affirms, with every shew of probability, that he attained his seventieth year.<sup>(2)</sup> Some authors have asserted, that, from a conviction of the truth of the miracles performed by our Saviour, he had em-

(1) Vide De Facultat. Simpl. Med. lib. x.; et Comment. 3. in lib. Hippocr. de Victu Acut.

(2) See Labbe, Elogium Chronologicum Galeni, in the Bibliotheca Greca of Fabricius, lib. iv. c. 17; and Ackermann in 5th vol. of same work.—According to Gabriel Bakhtischwah, Galen reached the age of eighty. (Casiri Bibl. Escorial, vol. i. p. 256.)

For the materials of this biographical sketch of Galen, I am principally indebted to the admirable works of Le Clerc and Sprengel, and to the authorities which their learned industry has pointed out.



braced Christianity, and died, while on a journey to Judea. Although the evidences of this important circumstance are not very satisfactory, no direct proof exists to the contrary; and we have a pleasure in thinking, that this great physician and philosopher, who had examined all the mysteries of the ancient systems, may have died a convert to that of Him, who proclaimed "peace on earth, good-will to men."<sup>(1)</sup>

Let it be remembered, in order to form a proper estimate of the merits of Galen, that, when he appeared, the medical world was distracted by an endless diversity of opinions,—some were dogmatists, some empirics, some methodics, some pneumatists; and many, having bewildered themselves amid mathematical investigations and dialectic subtleties, could give no reasons at all for the faith which was in them. Amid this "chaos worse confounded," Galen shone forth at once like a star in the encompassing twilight, and lighted back medical enquiry to the paths of truth and nature. Scorning to be fettered by names or systems, however hallowed by time or reputation, he accepted nothing on credit, but searched and ascertained for himself. He evinced neither prejudices nor partialities: whatever he found good in any system, he set aside as part of the foundation for his own; and by assiduity, ingenuity, and erudition, he went far to reconcile a

(1) Chartier, tom. i. in *Vita Galeni*, cap. 44.—Portal, *Histoire de l'Anatomie*, tom. i. p. 92.—Mundinus and Herthman (Sched. Nuremberg.) affirm that he died on the sea-coast, whither he had gone to witness the miracles performed by the disciples of our Saviour.



thousand apparent differences,—the attempt to amalgamate which, would have appeared paradoxical to an inferior understanding. Taken all in all, it may be said that Galen based his system on that of Plato, while he blended with it, into a harmonious union, the dogmas of Aristotle and Hippocrates. For the opinions of the latter, indeed, throughout all his voluminous writings, he evinces a respect, bordering on veneration.

The keen and caustic exposé of whatever was frivolous or erring in the doctrines and practice of the day, it would have been as well for Galen and his readers, that he had himself kept more strictly to a plain exposition of facts; yet, although ever alive to the absurdity of the frivolous argumentations, which at that time deformed medical research, his own works cannot be said to be free from the logical subtleties, characteristic of all the còtemporary schools. A thorough dogmatist in sentiment, he felt his own power, and treated the opinions of every adversary with a contempt which, while it evinced a want of philosophical candour, was only redeemed by the brilliancy of his own transcendent mind.

It appears that the treatises of Galen were given to the world in succession anonymously,<sup>(1)</sup> and the circumstance has been quoted, probably without due

(1) Galen, *Method. Med. lib. xli. p. 106.* Here and elsewhere he endeavours to shew that he attached little value to his own writings. We agree, however, with Sprengel; “*Malgrè toutes ces assertions, il avait une très-haute idée de son mérite.*”—*Histoire, tom. ii. p. 103.*

consideration, as a proof of the author's humble idea of his own merits. The fact is, that Galen has himself done so; and, consequently, a conclusion the very reverse of what he anticipated must be drawn from that very fact. The tone and temper of all his writings evince, that no man set out with loftier pretensions, or concluded with a more confirmed conviction of his own talents. Indeed, he has himself declared, that the glory of pointing out the true path of medical science belongs to Hippocrates, but that the honour of overcoming its obstacles was reserved for himself.<sup>(1)</sup>

It is also remarkable, that a person so renowned for just observation and correct inference, should have allowed his mind to remain so trammelled and hedged in by the prejudices of popular superstition. In one place he tells us, that, during his youth, while afflicted with pleurisy, the god Esculapius appeared to him in a dream, to recommend bloodletting as the remedy;<sup>(2)</sup> and in another, that the same affable deity advised him to return from Asia Minor to the service of the Roman Emperor.<sup>(3)</sup> Nay, he even went the length of defending the possibility of cure by enchantments, as may be seen in the tractate dedicated to the consideration of the Homeric Medicine.<sup>(4)</sup>

(1) Galen, *Method. Med. lib. ix. p. 134.*

(2) *De Curat. per Venæ Sect.*

(3) *De Libr. Propr.*

(4) *Alex. Trall. lib. ix. c. 4. p. 538.*

When in comparison, however, with these mere human prejudices, failings, and foibles, we regard the masterly writings which Galen bequeathed to posterity, as remarkable for their value, as enormous for their extent ;—the mass of facts, observations and theories, with which he enriched medical science ;—his vast genius, his unwearied industry, his noble enthusiasm, and his stupendous erudition,—they are dwindled to insignificance. Such is the commanding and eloquent power of his compositions, that even when the judgment is not thoroughly convinced, and we are aware that more casuistry has been used than logic, we allow ourselves—a *gratissimus error*—to be persuaded, from a feeling that we would almost as soon be in the wrong with him as in the right with any body else. Although, on medical subjects alone, he penned between four and five hundred treatises, and about half that number on subjects of general learning, among which were essays on philosophy and grammar, all his writings bear the marks of care and elaboration. We seldom meet with an idea or an expression which can be said to be in bad taste. He never appears to have entertained the thought, that the multiplicity of his works would be an apology for their slovenliness ; but composed with the wholesome conviction, that all his pages would be subjected to the test of critical scrutiny.

In taking a cursory glance of the services that Galen rendered to the Healing Art in general, we shall begin with the anatomical department, because

he justly characterized it as the basis of medical knowledge; and, throughout his whole life, it was the principal source of his attention.<sup>(1)</sup>

On a full examination and consideration of what has been written on the subject, it does not appear to us that any distinct proof exists of Galen having ever actually practised human dissection. His examinations seem to have been principally confined to the Simiæ and mammiferous tribes, as the most nearly approximating man in structure;<sup>(2)</sup> and to

(1) Galen, de Administr. Anatom. lib. ii.

(2) De Dogm. Hippoc. et Plat. iib. vii.—“Il parait,” says Sprengel, “avoir eu fort peu d’occasions d’ajouter aux découvertes deses prédécesseurs par des ouvertures de cadavres.” Histoire, tom. ii. p. 106.—See also Vesalius de Radic. Chyn. lib. i. (Ed. Albini, in Folio, Lugd. Batav. 1728.) A good deal of discussion has at different times taken place regarding the actual practice of Galen in human dissection. Portal seems to make no doubt as to his having had frequent opportunities of personal inspection, and argues his case with considerable adroitness.

“Vesale a prétendu,” he says, “que Galien n’avoit point disséqué de cadavres d’hommes, parcequ’on avoit fait une loi à Rome, en vue des desordres qui accompagnoient la guerre civile, du tems de Marius et de Sylla, qui défendoit de faire aucun usage des corps morts. Les lois de Juifs, au sujet de ceux qui touchoient à des cadavres, sont connues de tout le monde, mais chacun ne sait pas que les Grecs étoient à cet égard, dans les mêmes sentimens que les Juifs, c’est ce que Riolan prouve par un passage d’Euripide. *Si quelqu’un, dit ce Poëte, souille ses mains par un meurtre, ou si quelqu’un touche un cadavre, ou une femme accouchée, ce Dieu lui interdit ses autels comme à un impie.* Pline dit aussi, *qu’il étoit défendu de regarder les entrailles des hommes.* Mais Riolan croit cependant que les Médecins ont trouvé de tout tems, des moyens d’avoir quelques corps humains, pour les disséquer: *c’est injustement, dit-il, qu’on accuse Galien de n’avoir jamais disséqué d’homme, et d’avoir enseigné l’anatomie au singe, pour celle de l’homme. Je prouverois aisément par une infinité de passages de cet auteur, qu’il a disséqué, des singes et des hommes, mais qu’il n’a enseigné que l’anatomie de l’homme: il n’est en effet personne, qui après avoir lu Galien, ne soit de ce sentiment.*—Histoire de l’Anatom. t. i. p. 77-8.

This conclusion of M. Portal is rather hurried. Many people who have carefully perused Galen are of quite another opinion. Had no prior writings on human anatomy existed, there would have been less room for doubt; but as it is, the matter seems highly problematical.

satisfy himself on many points, he appears to have often had the scalpel in his hand. But as a proof how utterly human anatomy was at that time shut up from the world, Galen felicitates himself on the opportunities he had enjoyed of examining two skeletons preserved at Alexandria, and recommended all such as were anxious to acquire a thorough knowledge of osteology, to repair to that city.<sup>(1)</sup>

As to the account of osteology which the great physician of Pergamum has himself given, little farther need be remarked than with regard to its peculiarities; otherwise it is wonderfully precise and accurate. He makes the sacrum to consist of three parts, adding the coccyx as a fourth; while the sternum is said to be composed of seven distinct pieces. He defines the bones to be substances very hard, and very rigid, destined to sustain the other parts of the body. He mentions their apophyses, and epiphyses, and articulations; and terms the body of the bone diaphysis.

In myology, Galen made several very important discoveries, having pointed out and described no fewer than eight muscles hitherto unknown.<sup>(3)</sup> He denied that the texture of the heart was muscular; from the idea that such structure was too simple for carrying on the multiplied operations of that organ, and believed it to be insensible and destitute of nerves. His descriptions of the muscles of the

(1) Vesal. de Radic. Chyn. lib. i. p. 119.

(2) Galen, De Usu Part. lib. xii.

(3) Administ. Anatom. lib. i. p. 121.

larynx, as well as of the muscles and ligaments of the vertebral column, are remarkable for accuracy and minuteness. He entertained the erroneous suppositions, that the use of the external intercostals is to contract the chest, and that of the internal to dilate it; as also, that Muscle itself was a mixture of nervous and tendinous fibres.<sup>(1)</sup>

Of the bloodvessels, the knowledge of Galen was not superior to, or more perfect than, that of Herophilus or Erasistratus. He believed that the veins had their origin in the liver, the arteries in the heart, and that both were destitute of sensibility.<sup>(2)</sup>

He derived all nerves of sensation from the brain, and all nerves of motion from the spinal cord, but believed that in their extremities they were capable of accomplishing either purpose.<sup>(3)</sup> He entertained the hypothesis, that the pneuma generated in the ventricles of the brain had an alternating motion, correspondent to inspiration and expiration, that its presence was indicated by the continuons throbbing there, and that by its means the mental functions were performed. He pointed out the eminences on the base of the brain, which his followers afterwards named the *natés* and *testes*; as also the *corpus callosum*, and the *septum lucidum*.<sup>(4)</sup>

Galen's description of the numerous connections of the great sympathetic nerve with the *par vagum*,

1) Admin. Anat. lib. vii. De Usu Part. lib. v.-vii.

(2) De Dissect. Muscul. lib. xvi.

(3) De Usu Part. lib. ix.

(4) Admin. Anatom. lib. ix.

as also those of the recurrent, is exceedingly accurate. It is evident, however, that he confuses the hypoglossal nerves, or seventh pair, with the laryngeal branch of the par vagum; and derives the great sympathetic almost exclusively from the eighth pair.<sup>(1)</sup>

Admitting, with the peripatetics, the doctrine of the forces inherent in bodies, he divided these forces into three kinds, the vital, the animal, and the natural: the first residing in the heart, the second in the brain, and the third in the liver.<sup>(2)</sup>

The pulse is produced by the vital force, which communicates to the heart and arteries their diastole and systole. The animal forces, after being prepared by the vital spirits, ascend to the brain for the performance of the mental functions; while the natural are accomplished by means of the pneuma circulating in all the vessels.

Finding, however, that he could not satisfactorily account for the performance of all the functions on dynamic principles, Galen was obliged to call in the aid of the Aristotelian doctrine of the elements, making the primary qualities of bodies to depend on these singly; and adventitious qualities from their commixture.<sup>(3)</sup>

Considering health to be that state in which the body is free from pain, and in which all its functions are freely exercised, we arrive at the basis on which Galen founded his pathology. He defined disease

(1) *De Nervor. Dissect.* p. 205. *De Usu Part.* lib. xvi.

(2) *Arter. et Venar. Dissect.* p. 224-6.

(3) *De Element.* lib. i. *De Dogm. Hipp. et Plat.* lib. v



to be either an unnatural state of parts, similar and simple, or of the organs themselves,—the former arising from want of proportion among the elements, and the latter dependent on the form and situation of the parts affected.<sup>(1)</sup>

In the same perplexed and subtle style of explanation, Galen makes symptoms to originate either in derangement of function, change of apparent qualities, or vitiated secretion. He divided all causes into remote and proximate, occasional and predisposing. According to his theory, predisposing causes depend almost entirely on the superabundance or altered state of the fluids,—the first occasioning plethora,<sup>(2)</sup> and the latter putridity.<sup>(3)</sup>

Galen maintains, that, in all fevers, there exists a species of putridity, evolving an unnatural heat, which becomes a source of irritation, primarily affecting the heart, and thence the whole arterial system. From this definition he excludes ephemera, which he does not suppose to arise like all the rest from putrescency of humours, but merely from a particular state of the pneuma or ethereal principle.<sup>(4)</sup> He attributed quotidian intermittents to an alteration in the mucous secretions, tertian in the bilious, and quartan to putrescence of the black bile, which being the most sluggish of the humours in its move-

(1) De Diff. Morb. lib. i. De Tuend. Valet. lib. i.; et De Optim. Constit. p. 248.

(2) De Plenitudine, p. 342. Comment. 3. in lib. iii. Epidem.

(3) De Diff. Febr. lib. ii. Method. Med. lib. ii.

(4) De Differ. Febr. lib. i.



ments, takes more time in provoking an accession.<sup>(1)</sup>

Galen's explanation of inflammation is exceedingly chaste and simple. He defines it to be an unnatural introduction of blood into a part not previously containing it. When blood alone is thus introduced, he terms the disease phlegmonous; when air is also present at the same time, pneumatic; when accompanied with water, cedematous; and when with bile, erysipelatous.<sup>(2)</sup>

His division and classification of hemorrhages are such as are recognised at the present day in our schools of medicine.

We thus see that the medical opinions of Galen were characterized by infinite ingenuity, and that they exhibit a comprehensiveness of view, and of intellectual power, only observable in first-rate minds. It is not to be denied, however, that his love of hypothesis often came in the way of just observation. Few of his descriptions of disease are characterized by that breadth of outline, distinctness, and simplicity, which distinguish the writings of Hippocrates, and make the complaints of his patients recognisable to the readers of modern nosologies.

Galen exerted very considerable ability to little purpose, in endeavouring to trace the properties of medical substances to their primary qualities,—thus making their physical properties determine their mode of operation. Indeed, the general principles

(1) *De Differ. Febr.* lib. ii.

(2) *Method. Med.* lib. xlii.

of his therapeutics possess much more interest than his particular curative methods. From his ardent admiration of Hippocrates, Galen may be regarded as a dogmatist, although his admission of some of the better and more favourable tenets of other sects seems to countenance the claim to his title of an eclectic.

By admitting those indications of disease which symptoms afforded, he separated himself from the empirics ; yet judiciously adhered to them, in putting a proper estimate on the value of the facts brought by experience to the aid of theory. He recommends the strictest attention, not only to the primary cause of disease ; but, when that cannot be satisfactorily ascertained, to the influence of atmosphere, season, constitutional habit, previous mode of life, and state of the animal forces.

The regimen which Galen prescribed to his patients, differs in little, if any thing, from that recommended by Hippocrates.

In the earlier years of his professional life, Galen practised surgery at Pergamus, and with very marked success ; but after settling at Rome, it would appear that he confined himself solely to medical duties, although, when occasion urged, he did not stickle about letting blood of a patient. He established two general principles as the basis of all surgery, synthesis, or the re-union of parts, as after fracture or laceration ; and diæresis, or their complete division, as by amputation or extirpation.<sup>(1)</sup>

(1) Portal, Histoire de l'Anatomie et Chirurg. t. i. 89.

In four cases he detected luxation of the femur backwards—a variety not mentioned by Hippocrates,—and records two instances of spontaneous dislocation of the same bone.<sup>(1)</sup> But although, in the writings of Galen, we meet with a few bold chiral attempts, as in the application of the trepan to the sternum in a case of empyema,<sup>(2)</sup> yet it must be confessed, that by far the greatest part of his surgery appears to have been confined to fomentations, ointments, and plasters for external affections, together with the art of bandaging, a love for which he necessarily acquired at the Alexandrian schools,—and the employment of complicated machinery in fractures and dislocations.

In Chartier's edition of the works of Galen, we find not fewer than thirty treatises by him on subjects of anatomy and surgery. Some of them are indeed admitted to be apocryphal, but more than enough remain to exhibit his amazing industry and talent. Two or three are in a state of fragment.

So complete an ascendancy did the writings of Galen obtain over those of every other medical author, and so undisputed became his authority on all subjects relating to the healing art, that, for thirteen hundred years—a fifth portion of the world's age—his opinions were received as oracular in the schools of all the civilized countries. From this supposed infallibility, and the implicit reliance paid to all his

(1) Comment. i. in Lib. De Artic. ; et Com. iii. 16.

(2) Administ. Anatomix, lib. vii.

dicta, there can be no doubt that medical science severely suffered; as a check was put to all farther investigation. The fact of this triumphant despotism being undoubted, it is not therefore, on that account, a less cogent proof of Galen's transcendent ability, which, in an earlier age, must have led to the possessor's deification.

The great and fundamental error in Galen's mind, considered as a writer on medical subjects, was his love of theorizing, which led him sometimes to be even apparently blind to facts. Whenever an ingenious hypothesis crosses him, he is too apt to be led away into argumentations and logical subtleties, little consonant with the simple observations of nature, which gave rise to them. He is thus often defective, and frequently erroneous, in his scrutiny of causes; and, as a necessary consequence, his generalization of facts is not implicitly to be relied upon.

In whatever light we view Galen, he appears a great and illustrious man—one of the peculiarly gifted, who, wherever he is, by his intellect and imagination, causes his presence to be felt, bearing down all opposition in the consciousness of power, and, like Spencer's Una, making "a sunshine in the shady place." In his own day, his learning, his eloquence, and the general powers of his conversation, independently of his medical knowledge, set him down as a first-rate man; and, to whatever point he directed the force of his genius, there were none either beside or near him. The consciousness of this superiority;

which he could not long disguise even from himself, led him occasionally to be impatient of contradiction, and to bear himself haughtily towards his controversial antagonists. That this love of despotic pre-eminence forms an unpleasant feature in his multifarious writings, is not to be denied; but let it in counterpoise be remembered, that, if Galen felt himself great, when measured by the standard of his fellow-men, no one was more fully aware of his littleness, insignificance, and ignorance, when contrasted with superior orders of intelligence. After searching and scrutinizing all the systems of ancient philosophy, he found in each something to receive and admire, except in that one only, which was based on scepticism, and maintained the uncertainty of all knowledge.<sup>(1)</sup> Like all other really and truly great men, Galen was vividly impressed with "the beauty of holiness." Whenever he enters on the contemplation of the magnificent or beautiful in the external world, or on the examination of the exquisite in texture and conformation, his soul expands with a noble and adoring enthusiasm.<sup>(2)</sup> He expatiates on the be-

(1) See the Letters of Professor Kurt Sprengel, in his *Beiträgen*, or *Memoires pour servir à l'Histoire de la Médecine*, c. 1. p. 117—195. Also Enfield's *General History of Philosophy*, vol. ii. p. 96-8.

(2) In his treatise *De Usu Partium*, lib. iii., a passage of this kind occurs, whose religion beautifully coincides with that of the New Testament. "True piety," he says, "consists not in immolating hecatombs to the Deity, or in burning a thousand delicious perfumes to his honour, but in the humble acknowledgment, and lofty proclamation of his wisdom, his omnipotence, his love, and his bounty. He has shewn his infinite wisdom in selecting the best means for accomplishing his beneficent ends, and he has given proofs of his omnipotence in creating every thing perfectly conformable to its destination."

After his death, the reputation of Galen acquired a splendour which totally

nescience, the benignity, and wisdom of the Eternal Being, who created the universe, and delights to linger over the traces and tokens of his handiwork, everywhere gloriously outspread around him.

eclipsed that of all other writers on medical subjects. See Athenæus, *Præfat. ad Diepnos*, and Eusebius, *Histor. Ecclesiast. lib. v. c. 28*. Alexander of Aphrodisium compares him to the greatest philosophers of the ancient world. *Topic. lib. viii. c. 1.* Οἷον Πλατωνι ἢ Ἀριστοτελεῖ, ἔ Γαληνῶ.

## CHAPTER VIII.

DECLINE OF MEDICINE—THE CABBALISTS—ORIBASIIUS  
AND NUMESIIUS.

SOME writers, whose philosophy is opposed to the recognition of Christianity, have endeavoured to uphold the unfounded idea, that the genius of revealed religion is inimical to the propagation of art and science. The history of modern civilized nations being a demonstration to the contrary, it is needless to combat such an imaginary and preposterous assumption. Indeed, if we look back to the time, when the Roman empire, having arrived at the fullness of its political and intellectual power, the star of its glory began to decline towards the occident, we at once perceive that far other causes were in operation. We shall only regard these, in so far as our immediate subject is concerned.

During the Babylonian captivity, the Jews began to imbibe many of the peculiar doctrines of the Persian mythology,—more especially the continued agency of a good and evil principle, according to the philosophy of Zoroaster; thus mingling the tenets of another religion with the laws of Moses.



That portion of the Jewish people, which sojourn-ed at Alexandria, was not only treated with great kindness and consideration by the Ptolemies, especially Philadelphus ; but, being generously presented with their freedom, were encouraged to cultivate the more abstruse arts and sciences, and to translate their sacred books into the Greek language.<sup>(1)</sup> These translations were quite according to the palate of the Alexandrians, who delighted in the mysteries and marvels thus communicated to them ; and hence arose a mystic union between the reveries of Plato and the doctrines of Moses.<sup>2</sup>

The principal use made of the sublime knowledge thus communicated, seems to have been in affixing allegorical and potential meanings to particular words and phrases in Scripture ; and from these studies sprang up a tribe of mystics, who, secluding themselves from society, affected great sanctity of life and manners, and took upon themselves the name of Essenians. They were a kind of medico-theosophists, and applied themselves to the cure of diseases, less from the exhibition of physical substances—although they sought after the virtues of plants—than by cabalistic signs, words, and formulæ.<sup>(3)</sup>

In habits and manners, the Essenes appear so much to have resembled the primitive Pythagoreans, that Josephus was strongly inclined to consider them as

(1) Josephus, *Antiq. Judæor.* lib. xii. c. 1.

(2) Sprenkel, *Histoire de la Medecine*, tom. ii. p. 129.

(3) For an account of this singular order of men, see Euseb. *Histor. Ecclesiast.* lib. ii. c. 17. Joseph. *de Bellis Judaicis*, lib. ii. c. 3. Philo, *de Mundi Opific.* p. 5.



a mere Judaical resuscitation of that order; and certainly their seclusion in monasteries, their abstemiousness—the clean hands and pure hearts, which their society prescribed—and their being clothed in white vestments, were all in accordance with the spirit and precepts of that ancient school of Grecian philosophy.

From these Essenians, in the course of years, sprang the cabalistic system of medicine, which, necessarily full of vagueness and absurdity, took upon it something of a definite form, in the writings, first of Acibha, and afterward of Simeon Ben Jochai.<sup>(1)</sup> In treating diseases, their principal effort appears to have been aimed at bringing into action some corresponding forces from superior worlds, a knowledge of which could only be obtained by mystic communications consequent on a life of seclusion, piety, and abstracted meditation.<sup>(2)</sup>

In a short time, the superstitious mysticisms of the Cabalists communicated themselves to the declining philosophy of Greece and Rome, and tended more rapidly to the chaotic triumph of that semibarbarism, which was once more lowering over the general face of society. With regret be it allowed, that, blending the most inane absurdities and symbols with the purity of divine revelation, the early Christians also co-operated in striking a death-blow at legitimate science, by attributing to martyrs, and

(1) The authors of *Jezirah* and of *Sohar*, who lived at the commencement of the second century.

(2) Ursini *Antiquit. Scholast. Ebr.* In Ugolini *Thesaur. Antiq. Sacr.* vol. xxi. Reland's *Analecta Rabbinica*, p. 132.

their relics, the power of healing wounds and curing diseases.<sup>(1)</sup> The dislike, also, which they showed to those works of art—especially paintings and sculptures—emblematic of the heathen divinities, and used in their worship, tended, although falsely, to countenance the idea, that their religion was inimical to the cultivation of the finer and more aspiring powers of mind. But, although the cause was mistaken, the effect produced was the same; and thus, for several ages after the appearance of our Saviour, not only Pagans and Jews, but, as we have shown above, his followers also, conspired to the overthrow of intellectual empire, by giving themselves up to magic, acknowledging the active interference of demons and blessed spirits in the affairs of men, and leaving true philosophy in total abandonment.<sup>(2)</sup>

(1) Irenæus contra Hæres. lib. ii. c. 32. Gregorii Orat. iii. p. 76.

(2) "L'adorateur le plus sincere, doit avouer, quoiqu'à regret, que la croyance des chretiens au don de produire des miracles, et l'alliance de leur culte avec les idées de païens, donnèrent lieu à des erreurs pernicieuses, à des prejuges grossiers, et à des opinions depourvues de bon sens, qui portèrent un coup mortel aux sciences, et amenèrent les tenebres epaisses de la barbarie."—Sprengel, Histoire, vol. ii. p. 142.

Although in the text I have candidly stated the fact, of science and art having suffered from the early Christians, not only from their anxiety to destroy those pictures and images which related to idolatrous worship, but from their absurdly mingling up magic with their pure and sublimely simple religion, yet I beg to be distinguished from those, who attribute most erroneously the decline of literature to the propagation of Christianity. Far less do I believe that the spirit of our holy faith is inimical to the cultivation of intellect, for with a Bacon, a Newton, and a Scott before me, such an assumption would be preposterous. The fact is, that the Cimmerian gloom, which was overspreading the world, exhibited its twilight approach before Christianity, either as a religious or political engine, could be supposed to exert any general influence over the common mind; and let it be remembered, that, during the three first centuries of its slow but gradual spread, Tertullian, Origen, and Lactantius sprang from its bosom in the armour of learning. Even had this not been so, it would have been matter of small

Galen may be considered as the last of the Greek physicians, whose genius shed a true and legitimate glory over medical science; and although we come now to notice the works of several able and learned men, who succeeded him more immediately, yet their praise rests more in having preserved so much from oblivion, than in what they have themselves added to medical knowledge.

Having thus briefly pointed out some of the causes which tended to operate towards the decline of medicine, along with all other arts and sciences, we may mention—as writers on the healing art, who appeared in those days of twilight barbarism—Marcellus of Pamphylia, who wrote forty-two books in hexameter verses, fragments of which have been preserved by Oribasius and *Ætius*; <sup>(1)</sup>—Serenus Sammonicus, and his son of the same name; the former of whom was put to death by the savage Caracalla, for discountenancing the use of amulets, which that tyrant regarded as specific against the attack of intermittent fevers; <sup>(2)</sup> and the latter of whom bequeathed the rich library of his father to the young Gordian, who had been his pupil; <sup>(3)</sup>—Marcellus Empiricus,—Theodorus Priscianus,—and Sextus Placitus Papiensis. <sup>(4)</sup> These were all men of consider-

wonder; for the votaries of a new faith, subjected to insult and persecution, might well be supposed to have been absorbed in concerns still more weighty than those of mere secular learning.

(1) Suidas, vol. ii. p. 498. Oribasius, Synopsis, lib. viii. c. 10. *Ætius*, Tetrarch. li. Sermon. 2. c. 11.

(2) Spartianus, Vita Caracallæ, p. 86.

(3) Jul. Capitolinus. Vita Gordiani, p. 159.

(4) Fabricius, Bibliothec. Græc. vol. xiii. p. 448.

able medical knowledge and acquirement; but their learning was mixed up with much of the crude speculation and mysticism of the times in which they appeared, and which deform all their writings and reasonings on medical subjects.<sup>(1)</sup>

At length, in the reign of Julian, appeared two disciples of Zeno, the celebrated dogmatist of Cyprus, who each acquired an extensive and well-merited reputation. These were Oribasius of Pergamus, and Magnus of Antioch.

Oribasius of Pergamus, according to Eunapius,<sup>(2)</sup> or of Sardis, according to Suidas,<sup>(3)</sup> having received an excellent initiatory education, finished his philosophical studies under Zeno, and settled at Alexandria, where he speedily rose to distinction as a practitioner of medicine.<sup>(4)</sup> He was regarded by many as the most erudite man of his time; and we are informed by Eunapius—himself well versed in medical science, and to whom in all probability the four books of the Euphorist were inscribed—that, such was his personal importance, as to have been one of the great instruments in assisting Julian to ascend the throne; in gratitude for which important service he was created by the emperor, not only his architect or first physician, but also quæstor of Constantinople.<sup>(5)</sup> While in that official capacity, he was the

(1) *Vide* the indefatigable Ackermann, Institut. Histor. Med. c. xxv.

(2) Eunapius, p. 181.

(3) Suidas, vol. ii. p. 711.

(4) Julianus, Epistolæ, 17.

(5) “ Il ne contribua pas peu à faire monter Julien sur le trône. C'e fut en reconnaissance de ce service, que cet Empereur le fit son premier Medecin et Quæsteur de Constantinople.”—Portal, Histoire, vol. i. p. 99.

person that was sent on an important occasion to consult the oracle at Delphi, and to whom the celebrated response was given, "That henceforth for ever all the oracles should be mute." <sup>(1)</sup> Oribasius accompanied his master in his last expedition, and was witness to his death.

Having been sent into exile by Valentinian and Valens, he is said to have supported his misfortunes with great magnanimity, and to have acquired the respect and admiration of the barbarians among whom he was banished, to such an exalted degree, that they looked upon him as above human nature, and almost worshipped him as a deity. The penalty which he paid for his stedfast loyalty being at length put an end to, by the revoking of his sentence, he was again received into court favour, and high honours were conferred upon him, in consideration of the unmerited insults and injuries he had endured. <sup>(2)</sup>

At the request of the emperor Julian, Oribasius studied, digested, and made extracts from all the valuable works left by the ancients, relating to the healing art, and arranged the information thus derived into a systematic shape. <sup>(3)</sup> His books originally extended to seventy, but of this vast collection only

(1) Georg. Cedren. Chronic. Ed. Fabroti, Par. 1647. Sprengel, Histoire, vol. ii. p. 184.

(2) Eunapius, p. 182.

(3) Hence the verses—

Juliani Regis medicus celeberrimus hic est

Divus Oribasius dignus honore coli.

Providus instar apes veterum monumenta pererrans,

Ex variis unum nobile fecit opus.

Vide Portal, Histoire, vol. i. p. 100.

seventeen are now extant. In his after years he made from the whole a still more compendious manual, under the title of a Synopsis.

Oribasins has been regarded as a mere compiler by Le Clerc, who has dismissed his claims to consideration in a few sentences. But, be it observed, that in his works he did not give mere extracts from preceding writers. He clothed their ideas in his own language, and in many instances with the most manifest advantage, producing order out of confusion, and luminousness out of obscurity. He preserved the valuable, and threw out the trashy; and thus, while he diminished the bulk, he enhanced the excellence. Nor do his merits rest here; for putting his own personal observations out of view, to his pages we are indebted for the preservation of numberless admirable fragments of the early physicians, which must else have irretrievably perished.

It is not, however, necessary that we should enter into any minute critical analysis of works, thus in a great measure confined to recording the valuable remarks and descriptions of preceding authors, having already briefly considered these as they passed in succession before us. The observations which Oribasius himself occasionally hazards, are, for the most part, characterized by good sense and discrimination, as for example those on the principles which ought to regulate the physical education of children,<sup>(1)</sup> his methods of treating fever, attendant on exanthema-

(1) Oribasius, Synopsis, lib. v. c. 2.



tous eruptions,<sup>(1)</sup> and his plan for managing diseases of the liver.<sup>(2)</sup> In numberless places, indeed, of his laborious writings, we discern traces of a truly philosophical sagacity, and evidence of the able, correct, and experienced practitioner.

The anatomy of Oribasius is a mere compilation from Soranus, Rufus, and Galen; if we except his description of the salivary glands, which is more minute and accurate than we elsewhere find in any writer of antiquity.<sup>(3)</sup> His surgery appears to have been in a great measure confined to external applications, frictions, unguents, and embrocations; and he never advises operations, except in extreme cases.

Sprengel is of opinion that the *Euphorista* and *Commentaries on the Aphorisms of Hippocrates*, which pass current under the name of Oribasius, are apocryphal.<sup>(4)</sup>

Before concluding this chapter, it may be thought proper at least to mention Numesius, Bishop of Emesis, who lived in the time of Theodosius, and wrote

(1) Oribasius, *Collect.*, lib. vii. c. 7.

(2) ——— *Collect.*, lib. ix. c. 19.

(3) Portal, *Histoire*, tom. i. p. 101. Oribasius, *Collect.* lib. 24. Dr Freind's *History of Physic*, from the time of Galen to the beginning of the sixteenth century, vol. i. p. 13. An excellent account of Oribasius, and his writings, will be found in Dr Freind, who has completely atoned for Le Clerc's brief and slighting notice of him.

(4) Sprengel, *Histoire*, vol. ii. p. 188. Freind, is of the same opinion with regard to the latter. "The *Commentaries*," he says, "on the *Aphorisms of Hippocrates*, put out by Guinther under his name, are, without doubt, spurious," *History*, vol. i. p. 31. As a proof of this, Dr Freind considers not only their being utterly unworthy their imputed author, but from the real one having committed himself, by declaring that the work was written by the desire of Ptolemy Evergetes, between whose time and that of Oribasius, there is a distance of 600 years.

a treatise on the nature of man, which, in an after age, attracted considerable attention, from being pointed out by the adversaries of the immortal Harvey, as the source whence he had derived his doctrine of the circulation.<sup>(1)</sup> It is almost unnecessary to say, that the passage cited in confirmation by no means carries out the assertion.<sup>(2)</sup>

Although a great part of the physiology of this treatise is deduced from Galen, some of the views of Nemesius are at least full of ingenuity. He maintains that the elements composing the human body are opposed in their natures, and that they require the intervention of some third substance to effect their union and amalgamation;<sup>(3)</sup> and also that the only difference between aliments and medicines consists in the former assimilating themselves with the elementary qualities, while the latter counteract them.<sup>(4)</sup>

(1) Vide *Almeloveen Inventa Nov-Antiqua*, Amst. 1684.

(2) *Nemesius de Natura Humana*, c. 24. p. 209.

(3) ——— *de Nat. Hum.* c. 5. p. 114.

(4) ——— *de Nat. Hum.* c. 1. p. 18.



## CHAPTER IX.

ÆTIUS, ALEXANDER, AND JACOBUS.

DURING the fifth century, science was almost extinguished in the west by the repeated invasions of the Huns, Goths, Alans, and Lombards. Every thing tended to devastation, barbarism, ignorance, and the despotic establishment of the feudal system ; and, if matters scarcely fared so hard in the empire of the east, yet the learning which existed was led into false channels, from the progressive and extending operations pointed out towards the commencement of the preceding chapter ; and, so far as medicine is concerned, nearly two centuries elapsed without presenting the name of a physician worthy to be held in remembrance ! <sup>(1)</sup>

At length, about the middle of the sixth century, appeared Ætius, a native of Amida, in Mesopotamia, and who, like all other physicians of that age, studied at Alexandria.<sup>(2)</sup> He has been confounded by some with another person of the same name, who was a famous propagator of the Arian heresy at

(1) Vide Hallam's View of the State of Europe during the Middle Ages, vol. 1. chap. 1. Berington's Literary History.

(2) Tetrab. 1. Sermon. i. col. 23.

Antioch, in the time of the emperor Julian ; from which circumstance Dr Freind draws the inference that he also must have been a Christian.<sup>(1)</sup> Ætius rose to be physician to the court at Constantinople, and captain of the Imperial Guard.<sup>(2)</sup>

Following the example set by Oribasius, in a preceding age, Ætius undertook the task of collecting together all the remarkable facts, observations, and theories relative to the healing art, which could be gleaned from the writers of antiquity, without particular regard to the different opinions and dogmas characterizing the sects under whose banners they had severally arranged themselves.

Galen, as might have been expected, is the great source whence his compilation is derived ; but although he sometimes uses almost his very language, he generally states his own particular opinion, as well as the grounds on which it has been formed. His work possesses this great advantage over that of Oribasius, that he attaches more importance to symptoms, and their concatenation, as criteria of disease, and is more explicit in the laying down of his theories. His work is in sixteen books, which have been divided into four *Tetrabibloi*, though certainly not by himself, as Fabricius observes, but by some modern ; as the quotations made from him by Photius, as well as the references which he makes to

(1) History of Physic, vol. i. p. 76.

(2) In some manuscripts he is styled Κόμης Οψικίης, *Comes Obsequii*, or chief officer of those who went before the emperor, as attendants and harbingers.

himself, are according to the numerical series of books.<sup>(1)</sup>

The anatomy of *Ætius*, although for the most part copied from *Rufus*, *Galen*, and, at second hand, from *Oribasius*, has some peculiarities of its own, as for instance, where, in tracing out the third branch of the fifth pair of nerves, it is remarked that the substance of the teeth is supplied with nervous filaments, and that these are the only bones in the body possessing sensibility.<sup>(2)</sup> To him also we owe the best description which has come down to us from antiquity, of the parotid gland, as distinguished from the submaxillary cluster, all preceding authors having confusedly mingled them together.<sup>(3)</sup>

The surgical writings of *Ætius* are copious and valuable. From the operations of his own judgment, he was enabled to speak regarding a great proportion of the subjects he has discussed. His opinions were guided by experience, and his methods of management and cure are characterized by much caution and discrimination. We find a variety of surgical queries and suggestions, which had escaped *Celsus* and *Galen*, as well as the description of several diseases which have been omitted by *Paulus Ægineta*. He recommends and practised scarifications of the legs in anasarca; made free use both of the actual and potential cauteries;<sup>(4)</sup> cut out hemor-

(1) Vide *Freind's History*, vol. i. p. 79.

(2) *Tetrab.* 2. s. 4. c. 19.

(3) *Tetrab.* 2. c. 48.

(4) Some writers have contended that the ancients were unacquainted with the use of the cautery. Reference to *Ætius* puts the question to rest, (*Te-*

rhoidal tumours; operated for aneurism; tried to dissolve urinary calculi, by the administration of internal remedies; and has given a series of interesting chapters on inflammation of the intestines, followed by abscess; on encysted tumours; on the varieties of hernia; on pricks of the nerves and tendons; and, in fact, on almost every important branch of surgical knowledge. If, mixed up with these, we find some things which the matured experience of ages has abolished, it is less to be marvelled at than that surgery was already enriched with such a quantity of valuable facts and observations.

From Ætius having made no reference, in his writings, to the reduction of fractures and luxations, Portal remarks, with considerable plausibility,<sup>(1)</sup> that, in all likelihood, quacks were at that time in complete possession of this branch of practice. Better probably were it for society, that it was quite out of their hands now.

The pathological remarks of our author are almost uniformly based on the qualities of the elementary humours; and from these he supposes that all the varieties of disease take their origin; although sometimes, according to the fashion of the Methodics, he

trab. 2. s. 2. c. 20. et s. 4. 68.) Both actual and potential cauteries were recommended in cases of palsy by Archigenes, and the mode of applying them distinctly pointed out. Indeed, passing over Hippocrates altogether, they are mentioned both by C. Aurelianus and Themison; and Celsus strongly recommends their application in a variety of diseases, (Lib. 3. c. 21. et 23.; lib. 4. 23.)

See an admirable exposition of the acquaintance of the ancient practitioners with the cautery, in Freind's Hist. vol. i. p. 36, *et seq*

(1) Histoire, tom. i. p. 114.

speaks more of relaxation and constriction, than is quite consistent with such a sworn follower of Galen.<sup>(1)</sup>

Ætius has given a very accurate account of the distinguishing symptoms in different kinds of intermittent fevers, as indicated by their first paroxysms ; but, in discussing the topic of fevers in particular, he has rather slavishly followed the great physician of Pergamus.<sup>(2)</sup> He has described an immense number of affections of the eye, some of them both novel and curious, especially that particular one which he has denominated Phthisis of the pupil, in which, from a state of organic disease, objects assume an unreal magnitude.<sup>(3)</sup> He has given a very excellent account of gout, which he supposes to arise from one of the qualities of the elementary humours being in excess ; and was the first who ventured to expatiate on the nature and composition of urinary calculi,—a subject to which the investigations of modern chemistry have been directed with admirable effect.<sup>(4)</sup>

In materia medica, Ætius, following Galen, explains the operation of different substances with re-

(1) “ Souvent il affecte le Methodisme, et s'attache au *strictum* et au *laxum* bien plus qu'il n'appertient à un sectateur de Galien de le faire.” Vide Tetr. 2. s. 1. c. 102. col. 227. Sprengel, Hist. tom. ii. 202.

(2) Tetrab. 2. c. 1. 57.

(3) Tetrab. 2. s. 3. c. 53.

(4) Magendie, Physiological and Medical Researches on the Causes of Gravel. Memoirs of the Medical Society, vol. v. Dr Marcet on Calculous Disorders, and more especially vols. iv. and v. of the Medical and Chirurgical Review, which contain an account of the masterly experiments of Drs Wollaston and Pearsou.

ference to their primary and secondary qualities, arranging the various articles which compose it in an alphabetical order, and under the heads of the three kingdoms of nature, whence they are taken. We are indebted to him for many particulars regarding the pharmacy of the Egyptians, extremely curious in themselves, which must have else been lost;<sup>(1)</sup> and, although a Christian himself, he has not hesitated at once to record and recommend several of the medicinal charms and spells which were superstitiously confided in by that ancient race.<sup>(2)</sup>

As a writer, Ætius must be acknowledged as inferior to Oribasius. His style is more cramped and confused; nor do his materials possess the same lucid arrangement; yet in many things he exhibits not only much personal and acquired knowledge, but traces of a strong and vigorous intellect. That he should occasionally allow himself to be betrayed into the footsteps of credulity and superstition, has been a matter of surprise with several succeeding authors; but surely when we consider the gloomy state of society during the times in which he lived, the matter will cease to be one of wonder. Man is a gregarious animal, and the habits of the herd are contagious.

Not long after Ætius, appeared Alexander, surnamed Trallianus, from the city of his nativity in Lydia, although at what precise period has not been exactly ascertained. Several circumstances concur,

(1) Freind's History, vol. i. p. 76.

(2) Tetrab. 2. s. 4. c. 50. et Tetrab. 4. s. 3. c. 14.

however, in placing him about the middle of the sixth century, in the reign of Justinian.

Alexander was one of four brothers, all of whom rose to merited distinction by their talents and acquirements, as we are informed by Agathias.<sup>(1)</sup> He commenced the study of medicine under his father Stephanus,<sup>(2)</sup> and afterwards prosecuted it under a practitioner of eminence, to whose son Cosmas, he afterwards dedicated his works, as a mark of gratitude and respect.

Having added to his stores of general knowledge, as well as to his medical reputation, during his leisurely peregrinations through Italy, France, and Spain, he was at length called to Rome, where his skill and success, joined to his great acquirements, facility of communicating his knowledge, and amenity of temper, soon gained him a reputation beyond that of any of his cotemporaries. Patients flocked to him from the most remote countries for the benefit of his advice, or to put themselves under his care; and Portal affirms,<sup>(3)</sup> that the name of Alexander was only given him as a mark of distinction, and as it were for the purpose of shewing that he surpassed all the physicians of his own time, as much as Alexander of Macedonia did in warfare all the generals of his. Be this as it may, and in all probability this application of his name was only a later suggestion

(1) Agathias, lib. v. p. 149.

(2) Alexander, lib. iv.

(3) Portal, Histoire, tom. i. p. 126.



of partial friendship, he appears to have been quite worthy of all the celebrity, great as that undoubtedly was, which he obtained. In the blaze of his fame, he is said to have retained all the modesty of his nature, and to have possessed amiability of disposition to such a degree, that his patients became as it were his friends; he could not be looked upon without regard, and that regard was ever ripened by acquaintanceship into a deeper and warmer feeling. He must have been no common man, in whom, by every concurring testimony, so many estimable qualities were centered,—learning, industry, experience, refined perception, accurate judgment, and high moral feeling. Taking all things into consideration, Freind regards Alexander and Aretæus, and apparently with justice, as the two most valuable contributors to the science of medicine since the days of Hippocrates ;<sup>(1)</sup> and Sprengel awards the former a superiority over all the rest of the modern Greek physicians.<sup>(2)</sup>

Although occasionally differing, and that most judiciously, in opinion from Galen, Alexander must rest contented to be set down as a follower of that great man. On very insufficient grounds, as we shall see, Fabricius reckons him a methodic, and appears to wonder that Prosper Alpinus has not included him in his full and minute account of the members of that sect. It is true that, in conformity to their mode of expression, he has, in more places than one,

(1) Freind's History, vol. i. p. 83.

(2) Histoire, tom. ii. p. 208.

made use of the terms *strictum* and *laxum*, to denote particular states of the animal economy; but, arguing on the same principles, he may as well be classed among the pneumatists, because he refers to a disordered movement of the ethereal essence, as one of the general causes of disease.<sup>(1)</sup>

In his anatomy, he is an almost servile follower of Galen throughout; and, indeed, seldom differs from him in his physiology, except in illustrating, extending, and beautifying some of his imperfect theories of disease.

In a work of this kind, and restricted to the limits which we have prescribed ourselves, it is necessarily impossible to point out all the peculiarities of practice in such a writer as Alexander. Suffice it to say, that his labours still possess a value, which entitle him to the consideration of the modern reader, and that no one, after a perusal of his curious pages, is likely to lament the lack of instruction which he has afforded them. He regarded affections of the eyes, dysentery, gout, and even intermittent fevers, as arising from the predominance of one of the cardinal humours; he pointed out with great accuracy the distinction between the symptoms of pleurisy and inflammation of the liver—the seat, varieties, and management of dysentery,—and the regimen most proper to be adhered to, in each of almost all the diseases of which he has given a description.

He has thrown out some admirable observations

(1) Alexander, lib. 1. c. 1. p. 1; lib. 2. c. 4. p. 138; lib. 1. c. 2. p. 31.

on the moral treatment of melancholy madness, and added some very interesting cases and illustrations.<sup>(1)</sup> On the subject of bloodletting, he differed in opinion from all the other physicians of his day, by contending that the numerous communications of the sanguiferous system rendered it of no moment in the generality of cases, in what part of the body a vein was opened.<sup>(2)</sup>

With his characteristic nobleness of disposition, Alexander implores the students of medicine, in many parts of his writings, never to allow themselves to become the slaves of system; but, in the consideration of diseases, to have always an eye on the collateral circumstances of the case, age, climate, sex, and constitution, and especially to pay attention to the efforts towards health, which nature makes in every case of disease.<sup>(3)</sup> In regards such as these, we discern the true philosophical spirit, which ought ever to preside over medicine; and, from his works being replete with them, we discover the superior genius of this physician.

With all these high qualifications and acquirements, however, it is melancholy to think that even the mind of such a man as Alexander of Tralles, was unable completely to triumph over the vain imaginations and superstitious belief of the age wherein he lived. Mixed with his beautiful expositions of theory, and his admirable practical remarks, we oc-

(1) Alexand. lib. i. c. 17. p. 110.

(2) Lib. i. c. 17. p. 102.

(3) Lib. i. c. 10. p. 19-25.

casionally find recommendations that startle us,<sup>(1)</sup> as sentences from Homer for alleviating the gout, and cabalistic words and phrases popularly believed to exert a healing efficacy in a variety of ailments.<sup>(2)</sup> Amulets are also recommended to be worn against the attacks of intermittent fever.<sup>(3)</sup>

Alexander left a separate treatise on intestinal worms,<sup>(4)</sup> which he divided into the *Ascarides*, *Lumbrici*, and *Tæniæ*; and has pointed out, with admirable accuracy, the distinguishing symptoms of each, together with the methods of cure, which are little different from those at present generally adhered to. It may be remarked as not a little singular, that Alexander does not treat of any of the diseases incident to women.

Under the name of Alexander of Aphrodisium, a peripatetic philosopher, we have a collection of problems in physics and medicine, which, according to the opinion of the best judges, must have been the work of our author.<sup>(5)</sup>

In a chronological point of view, we should have

(1) Alexand. lib. i. c. 4. p. 538.

(2) Lib. ix. p. 656-7.

(3) Lib. xii. p. 767. Many editions of the works of Alexander have been given to the public. That of Jacques Gouffilius was published at Paris in the original Greek in 1548. A still earlier edition, somewhat barbarously translated into Latin under the title of *Alexandri Yatroi Practici*, appeared at Lyons in 4to. in 1504. This was corrected and revised by Albanus Torinus, and published in folio in 1553.

Another translation from the original Greek, was undertaken by Jean Guinterus, and appeared at Strasburg in 1549, with the annotations of Jean Molin. *Vide* Portal, tom. i. p. 121.

(4) Fabric. vol. xii. p. 602.

(5) Alexandr. Problemata. Ed. Angel. Politian. 12mo. Lugd. 1573.

perhaps given Jacobus, surnamed Psychrestus, a precedence to Alexander of Tralles, who mentions him with high admiration in his works.<sup>(1)</sup>

Jacobus was born at Alexandria, and rose to great distinction as a physician, about the middle of the fifth century. He was initiated into the rudiments of medicine by his father Hesychius, who was originally from Damascus, at which place he had spent the greater part of his life.<sup>(2)</sup> We mention this circumstance, as it has led some erroneously to believe that Jacobus was also a Damascene.

In the reign of Leo the Thracian, Jacobus settled at Constantinople, where his extraordinary erudition, and his skilful practice, speedily raised him to such notice, that he was created Count, and Archiater to the Emperor. The senate decreed him a statue, which was set up in the baths of Zeuxippus, erected by the Emperor Severus;<sup>(3)</sup> and Isidore of Gaza mentions another raised to his honour in Athens, which he had himself seen.<sup>(4)</sup> His scholar Asclepiodotus, who rendered himself celebrated by reviving the use of the white hellebore, prefers him to all the modern physicians; and Suidas places him on the same table-land of fame with the most celebrated of the ancients.<sup>(5)</sup> He appears to have possessed the faculty of gaining the entire confidence of

(1) Alexand. Trallian. lib. v. c. 4.

(2) Photius, Cod. 242, p. 1051. Suidas, t. ii. p. 88.

(3) Malel. in Vita Leon. Alex. Trall. lib. v. c. 4.

(4) Photius, p. 559.

(5) Freind's History of Physic, vol. i. p. 127.

the sick who consulted him, as well as of securing ever afterwards their friendly regards—circumstances pretty strongly evincing both his practical skill, and his kindly disposition. Like Hippocrates he was fond of exhibiting his knowledge of prognostic signs, and was so remarkable in this way, that the credulity of the times suspected him of superhuman power. On this rather insufficient ground, Sprengel throws out against him the imputation of charlatanism ;<sup>(1)</sup> and that he excited the envy of many of his less successful brethren, is no proof of his superiority being unmerited, far less of his having used any dishonorable means to acquire that distinction.

Jacobus appears to have lived more in the eye of the world, than in his writings. Both Ætius and Alexander mention several remedies of his invention.<sup>(2)</sup>

(1) Sprengel, *Histoire*, tom. ii. p. 200.

(2) *Tetrab.* iii. c. 43. *Alexand. lib.* xi. c. 1. p. 645.

## CHAPTER X.

THEOPHILUS—PAULUS ÆGINETA—ACTUARIUS—  
MYREPSUS—AND EXTINCTION OF THE GREEK  
SCHOOL.

THE ruin of the Empire of the East was not more effectually accelerated by external than by internal causes,—by the invasions of the Persians and Saracens, than by luxurious effeminacy, the relaxation of moral discipline, the neglect of religious worship, and the cruelties of a most despotic government. Every thing tended towards desolation and decay. Remote provinces were falling under the sword of conquest; and, to the very centre of the imperial sway, was extending that lethargy from which there was no awaking. The ancient Roman heroism had degenerated into savage fierceness; the scrutinizing intellect of Greece into low cunning: and the spirit of industry and invention “paled its ineffectual fires” amid the stifling haze of surrounding barbarism. The fear of change perplexed the public mind; and insecurity caused want of exertion. The place of science and literature was supplied by religious



disputations ; and, with such a high hand was matters carried, that Leo the Third condemned to the flames the libraries of such sacred establishments as hesitated to obey his mandate, regarding the destruction of all images used in worship.<sup>(1)</sup>

To complete this melancholy picture of intellectual prostration, the reputation of Alexandria, which alone of all the other seats of learning had hitherto sustained itself, began also permanently to decline. It had suffered partial obscurity by the Saracenic conquest ; but, from the smouldering fires of its academies, occasional coruscations continued to be emitted, and, from time to time, a bright name arose to support its ancient splendour. But, with all the other arts and sciences, medicine was now doomed to a long eclipse ; and, down to the days of Paulus of Ægina, we meet with few names worthy of even a passing mention.

Theophilus, captain of the guard under Heraclius, compiled from Galen and Rufus, a treatise on the use of the various anatomical structures, principally, it would appear, for the purpose of affording scope for his devotional admiration of the wonderful mechanism and adaptation of parts to each other which the human frame exhibits.<sup>(2)</sup> He certainly has done this with very considerable ingenuity ; although, from many passages, it is evident that he had no knowledge practically of anatomy, and gave his des-

(1) Niceph. Gregor. p. 37. Constant. Manass. p. 87.

(2) Theoph. de Corp. Human. Fabric. Fabric. Bibl. Græc. vol. xii. p. 648.

criptions from books alone. This being the case, it is curious, that to him we should owe more minute and accurate accounts of one or two structures—as, for instance, the palmar aponeurosis, and the muscular fibres of the intestines<sup>(1)</sup>—than are to be found in any of the writers of antiquity. That he has committed occasional mistakes, is not to be wondered at; as his notions of the dura mater being perforated over the cribriform openings of the ethmoid bone,—of the ductus coledochus opening into the cæcum,—and of the choroid coat of the eye being extended over the crystalline humour.<sup>(2)</sup>

Two other treatises by Theophilus are yet extant, the one on the pulse, the other on the urinary secretion.<sup>(3)</sup> Of the former, it is enough to say, that the indications, which the arterial diastole and systole are made to exhibit, are by far too fine-spun to have had their origin in observation, and not at all available at the sick-bed. The latter is a mere cento from preceding writers, more particularly Galen.<sup>(4)</sup> He also, in accordance with the fashion of the times, commented on the aphorisms of Hippocrates, as did

(1) Lib. i. c. 8. Lib. ii. c. 8.

(2) Lib. ii. c. 7. Lib. iv. c. 20. Ibid, c. 12.

(3) Freind (History, vol. i. p. 250.) attributes these tracts to Theophilus; and Sprengel describes them as his (Histoire, tom. ii. p. 221.), without expressing a doubt on the subject. Portal on the contrary (Histoire, tom. p. 130.) says, that there were seven persons of this name, and that among the last of them was the author of the writings in question. His authority is Vanderlinden, in his work de Scriptis Medicis.

(4) Theoph. de Urina, c. 19. Stephen. Art. Med. Princ.

Ætius of Athens, a disciple of his own, John of Alexandria, and Palladius the sophist.<sup>(1)</sup>

Passing over Procopius the historian, whom Freind supposes, from many passages in his writings, to have been brought up to physic,<sup>(2)</sup> we come to Paulus Ægineta, a celebrated surgeon and obstetric practitioner of the Alexandrian school.

The exact time, at which Paulus lived and wrote, cannot now be exactly ascertained. Le Clerc places him so early as in the fifth century; but Freind, and, after him, Sprengel, have given proofs to shew, that he may with much more reason be referred to the seventh. Of his personal history, few particulars have come down to our days. Like Alexander, he appears to have been fond of travel; and by study, observation, and contrasting together the various modes of practice, prevalent in different countries, succeeded in amassing an extent of professional knowledge, that soon raised him to an unrivalled eminence and reputation.

From the modesty of the title which Paulus affixed to his great work,<sup>(3)</sup> he has been taken at his word by some, and unjustly considered as a mere collector of extracts from preceding writers on medicine. This is far from being the case; for he deals largely in observations deduced from his own

(1) Preu, Diss. de Interpretibus Hippoc. Græcis, p. 58.

(2) History, vol. i. p. 143. Blondus, Sabellicus, and Tiraquellius entertained the same opinion; and many of his remarks and descriptions indicate a more than ordinary insight into medical matters. See De Bello Gothico, lib. ii. iii. iv. *passim*. His account of the Plague is, above all, remarkably full, perspicuous, and accurate. Compare with lib. vi. c. 50.

(3) *Vide passim*, De Re Medica libri septem.

experience ; differs, and gives his reasons for so doing, from many authors whom he cites ; and gives descriptions of diseases and surgical operations, not to be found in the pages of any predecessor.

Of anatomy, we find very little in the works of Paulus ; but to surgery he was a large and valuable contributor, so much so, indeed, that he has been preferred by some to all the more ancient writers, scarcely excepting Celsus.<sup>(1)</sup> We find a reason for this, in his not having been a mere theorist, and in his having stamped so much of the information he communicates with a value, only deducible from practice and experience. He had again and again performed most of the operations he has described : and his Sixth Book has been considered by many, and not without reason, as the best body of surgical knowledge, previous to the revival of letters.

We can only notice a few of the most striking points of peculiarity in the doctrines of this eminent man. He recommended bleeding from the neighbourhood of the part affected, not because Hippocrates practised that method, but, as Sprengel observes, from an experience of the superior advantage derivable from it.<sup>(2)</sup> He did not hesitate about arteriotomy in cases of very violent ophthalmia. He pointed out the advantages to be derived from freely opening a vein, with the view of accelerating the painful passage of a calculus through the ureter. He opened internal abscesses by the application of

(1) Among others, Portal, *Histoire de l'Anatomie*, &c. tom. i. p. 124.

(2) *Histoire*, tom. ii. p. 225.

canstics,—a plan which was more extensively followed out by his Arabian successors. He particularizes the spots at which it is most advisable to perform paracentesis in the different alleged species of ascites.<sup>(1)</sup> In operating for the stone, he first endeavoured to ascertain the situation of the calculus by the rectum, then made his incision, not along the raphe of the perineum, as recommended by Celsus, but to one side of it.<sup>(2)</sup> He pointed out, with much perspicuity, the varieties of aneurism, and the cases in which it is advisable to attempt a cure by operation.<sup>(3)</sup>

After repeating what Galen has said on the subject of aneurism, Paulus makes an accurate distinction between such as arise from anastomosis, and such as follow on rupture. He agrees with him in defining it to be an arterial tumour, caused by extravasated blood ; and, in common with all the Greek and Arabian authors, believed it to originate from rupture in the coats of an artery. Fernelius was the first who asserted that it might be occasioned by dilatation, and, in this opinion, he was supported by Vesalius.<sup>(4)</sup>

(1) Dr Ferriar, in his Medical Observations (p. 87.), has certainly misrepresented Paulus on this head. Our author recommends the paracentesis to be made three finger-breadths below the navel in the linea alba, in cases of protopathic dropsy ; more to the right when the disease is owing to obstructions in the liver ; and to the left when caused by congestion.

(2) For this account of the lateral operation, see lib. vi. c. 60. p. 197.

(3) Paulus, lib. vi. c. 36.

(4) Hildanus has described an aneurism arising from puncture, and conjectured shrewdly that the outer coat might, by compression, be again rendered whole, while the wound in the inner remained open. Sennertus, without ac-

Among the distinguishing peculiarities of the surgery of Paulus, may be mentioned laryngotomy, and excision of the mamma. His method of performing the latter operation was by a crucial incision.

Before his time, surgical writers have given no description of making an incision into the trachea, with a view of carrying on artificial respiration; nor does such an operation appear to have been ever contemplated by them, so far as our reading goes. The method recommended by Paulus is by making a transverse cut between the third and fourth rings of the cricoid cartilage, taking every possible precaution to avoid the great vessels.<sup>(1)</sup> By throwing the head of the patient back, the parts were put on the stretch, and greater scope was afforded that the cartilaginous rings might be left entire, and only the membrane between them divided.

Paulus Ægineta, however, has acquired his most striking characteristic as a practitioner, from his distinction as an accoucheur—a branch of medical science, in which he rendered himself so famous, that it obtained for him, among the Arabians, the title *par excellence* of CAWABELY;<sup>(2)</sup> and rendered him an oracle among the women, to whom that de-

knowledge, following up this hint, made all aneurisms consist in a rupture of the inner coat, while the outer remained entire. The same doctrine was also afterwards maintained by Willis, Barbette, and others.

For a very curious discussion regarding the opinions entertained concerning aneurism, the reader is referred to the pages of the learned Freind, *Hist. of Physic*, vol. i. p. 179. *et seq.*

(1) *De Re Medica*, lib. vi. c. 33.

(2) *Abul. Faragius*, *Hist. Dynast.* Oxon. 1663, ix. p. 181.



partment had previously been chiefly, if not altogether, entrusted. His instructions regarding the obstetric art are, nevertheless, sufficiently crude—a circumstance not much to be wondered at, when we reflect, that the subject had excited little or no attention among medical writers, and had been allowed to remain nearly dormant from the time of Hippocrates. He considered head and feet presentations as almost equally natural;<sup>(1)</sup> but that all others should, if possible, be reduced by art—to either one or the other of these—an important step in the progress of midwifery. To Paulus we also owe the proposal of embryotomy, which he advises in cases where the volume of the head is too great for transit through the natural passage,<sup>(2)</sup> having first ascertained that life is extinct in the child. He cautions against undue force being used in extraction of the placenta, as being liable to produce partial inversion of the uterus; and has given an accurate and ample account of inflammation of that viscus, and its consequences.<sup>(3)</sup>

From the ninth century till the destruction of the Eastern empire, the history of medicine would present a total blank, save for the not very prominent names of Jean, commonly styled Actuarius, Demetrius Pepagomenus, and Nicholas, better known under the cognomen of Myrepsus.

(1) *Methodus Studii Medici*, Hermannii Boerhaave accessionibus locupletata, ab Alberto Haller.

(2) *De Re Medica*, lib. vi. c. 74.

(3) *Ibid.* lib. iii. c. 64. p. 115.



During this extended period, several princes indeed flourished, who not only encouraged literature and science, but were themselves distinguished for both. Bardas exerted himself to the utmost to re-establish the schools, and to endow professors from the public purse; nor were his successors Basil of Macedonia, and Leo the Sixth, less arduous in the same honourable path.<sup>(1)</sup> The tide of the world's affairs had, however, set in a contrary current, and although philosophers and historians were thus fostered and patronized into existence, it proved unavailing in stimulating the spirit of medical inquiry into renewed vigour.

The time when Actnarius appeared, has not been sufficiently stated, nor is it easy to see how this can be now accomplished, no cotemporary writer having made mention of him. Justus places him in the eleventh century;<sup>(2)</sup> Renè Moreau in the twelfth; Fabricius towards the end of the thirteenth;<sup>(3)</sup> and although each has succeeded in bringing forward a few probabilities in support of his proper opinion, none of them can be said to have removed the subject quite beyond the boundaries of doubt. He was a Greek by nation, and practised with great distinction at Constantinople, where, on being elected chief physician to the Court, he dropped his own name of John the son of Zacharias, and was after-

(1) Zonar. lib. xvi. p. 161. *et seq.*

(2) In Chronolog. Medicor.

(3) Compare Freind, vol. i. p. 560. *et seq.* with Lambec. Bibl. Cesar. vol. vi. 113.

wards designated and known by the surname, thus acquired by office.<sup>(1)</sup>

Actuarius informs the reader, that his six books relating to methods of cure were hurriedly, and as it were extemporaneously written for the use of one of the great officers of state, the Lord Chamberlain, who was about to proceed on an embassy to the north; but although principally compiled from Galen, Ætius, and Paulus, they contain a variety of striking reflections and valuable practical information, suggested by his own experience. We may particularize his remarks on inequality and variation of pulse, a difficult subject, which he has treated with great discrimination. He is principally distinguished as having been the first Greek writer, who made mention of the milder purgatives, senna, cassia, and manna, and of the distilled waters.<sup>(2)</sup>

Although the writings of Actuarius are chiefly confined to physic, we find several chapters in his second book dedicated to surgical affections. He treats of diseases of the ears, eyes, nose, and mouth,—of cutaneous eruptions—of tumours,—and of ulcers; and also of venesection, arteriotomy, cupping, scarification, and baths. In this department, however, he is far from deserving unqualified praise; his

(1) Codin. lib. II. Possini Glossar. ad Pachymer. IIist. Andronici, p. 468.

(2) Method. Medendi, lib. v. c. 4. Gesner (Præfat. Euonym.) has endeavoured to shew that no chemical process was used in the preparation of these liquors. Languis (Epist. lib. i. 53.) thinks otherwise; and so after him does Le Clerc, who rather wildly conjectures that Actuarius was bred up in the school of the Arabians, and was there taught chemistry.

surgery being little more than opinions from different authors indifferently put together.<sup>(1)</sup>

Cotemporary with Actuarius was Demetrius Pepagomenus, a physician who, by command of the Emperor Michael the Eighth, composed a treatise on the nature and cure of gout, which abounds in admirable reflections.<sup>(2)</sup> He maintains that the malady is not a local but a constitutional one, produced by enfeeblement of the digestive organs, and errors of regimen; that nature directs the morbidic particles thus generated upon the weaker articulations, where it deposits them, and that the only modes of prevention and cure are sobriety and temperance. It would have been as well for society, had all writers on the subject discussed it with equal frankness.

We must now, in conclusion, say a few words of Nicholas of Alexandria, commonly styled Myrepsus, from his having published the work on medicines which is still extant, under that name. It would be as difficult to fix his time as that of Actuarius; but from his mention of that physician,<sup>(3)</sup> as well as Mesue,<sup>(4)</sup> and Michael Paleologus, under the name of Angelus,<sup>(5)</sup> we are led to believe that he lived during the earlier part of the twelfth century. At

(1) *Methodi Medendi Libri sex, quibus omnia quæ ad Medicinam facitandam pertinent fere complectitur, quod Henricus Mathisius, Brugensis, Latino idiomate donavit. Venetiis, 1554. 4to.*

(2) *Demetrius Pepagomenus de Podagra, Lugd. Bat. 1743.*

(3) *Medicament. Opus. sec. xxxiii. c. 99.*

(4) *Mesue, s. xxxii. c. 117.*

(5) *Sprengel, Histoire, tom. ii. p. 244.*

all events, his work must have appeared before the conclusion of the thirteenth ;<sup>(1)</sup> as Sylvaticus and Pedemontanns, the physicians of Robert, king of Sicily, whose reign commenced in 1310, both make mention of him.

It is supposed that Myrepsus abode either at Nicea or Alexandria ;<sup>(2)</sup> and, from many passages in his writings, it is evident that he was a practitioner of the healing art. His work is a sort of dispensatory, containing an account of the compound medicines, mentioned by Greek and Arabian authors, and is written in a very impure and barbarous dialect of the former language. It is divided into forty-eight sections, and treats, not only of the manner in which the ingredients of the different formulæ are compounded together, but of their uses and effects.<sup>(3)</sup>

From our account of the works and authors alluded to in this concluding chapter on the Greek physic, it must be evident to all, that, along with the other arts and sciences, medicine was also rapidly hurrying into declension. Its character had been in a great measure, for a long time, sustained only by compilations from the writers of preceding and more fortunate ages ; but the style and language of even these sufficiently indicate the miserable falling off which had taken place since the days of Celsus and Galen. Even the Actuarii, or principal court

(1) Freind's History, vol. i. p. 292.

(2) Sec. xxiv. c. 12.

(3) The best edition of the *Opus Medicamentorum* is that published at Nuremberg in 1658, with the preface by Hartman Beyer.

physicians themselves, had fallen into such disrepute in the fourteenth century, that Andronicus the Third, when labouring under an affection of the liver, dispensed with their attendance, and called in Arab doctors from Persia.<sup>(1)</sup> If such were the heads of the profession, it may be conjectured, with little breach of Christian charity, that the bulk of the brethren were likely to be any thing but enlightened. Even the sentimental and delicate-minded Petrarch could not forego the admirable opportunity which the ignorance and quackery of the Greek physicians afforded as a theme for the satiric muse.<sup>(2)</sup> Yet the spirit of intellectual greatness seemed loath to forsake the clime which it had so long gloriously illuminated.<sup>(3)</sup> From the smouldering ashes a tongue of flame occasionally burst forth. The energy of the olden days, although dormant, was not altogether extinguished; and, from time to time, when all around was barbarism and darkness, a tincture of the classic ages occasionally mingled itself with the droppings of the Greek pen, down to the middle of the fifteenth century.

(1) Nicephor. Gregor. lib. xi. c. 9.

(2) Petrarch. Senil. lib. v. ep. 7.

(3) Sprengel, Histoire, tom. ii. p. 246.

## SECTION THIRD.

## CHAPTER I.

ORIGIN AND PROGRESS OF MEDICAL SCIENCE IN ARABIA—MESUE, HONAIN, SERAPION, ALKHENDI, AND RHAZES.

WE have thus, at least in outline, traced medical history from its origin in pagan traditions, through the Egyptian, Greek, and Roman dynasties, down to the decline of the Latin principalities in the East ; and now enter, in conclusion of our present undertaking, upon the field of Arabian physic.

Notwithstanding many untoward calamities, Alexandria still remained, as we have seen, the centre of civilization and science ; and, from the commerce carried on between that capital and the cities of Mecca and Medina, knowledge was gradually irradiated throughout the fertile but neglected wilds of Arabia. According to Abulfaragins, Saporess the First was married to a daughter of the Roman Emperor Aurelian, who sent along with her several

Greek physicians, who exerted themselves, with great success, in propagating through the East the medical doctrines of Hippocrates.<sup>(1)</sup> He afterwards established a school of medicine at Jondisabour, the new capital, which he had founded; and that, by the patronage and munificence of his successors, it rose to great celebrity, is evident from the fact, that, among other celebrated authors, Rhazes, Ali-Abbas, and Avicenna, were educated in these more eastern parts of Asia.<sup>(2)</sup> The emigration to these districts of the Nestorians, a sect of heterodox Christians, who were banished from the pale of the church, tended also, and probably in a much more extensive degree, to the spread of literature and science; as, wherever they went, they left behind them the rudiments of art and civilization. To the more immediate seats of literature, the dispersion of the school of Edessa, and the expulsion of the Athenian platonists by the Emperor Justinian, were of immense advantage, as they caused many, renowned for intellectual vigour, to seek an asylum in the remoter East. Even so early as the time of Mahomet himself, Hareph-Ebn-Kaldaht, a pupil of the Greek school of Jondisabour, came to Mecca, where he settled, and received the commendations of the prophet for his medical skill.<sup>(3)</sup> He was afterwards appointed physician to

(1) *Histor. Dynast.* p. 129.

(2) *Freind's History*, vol. ii. p. 10. See in the same work a very excellent account of the different branches of knowledge, to which the early Arabians devoted themselves.

(3) *Herbelot*, p. 430.



his successor Abu Beker; rose high in his personal favour; and was poisoned along with him.<sup>(1)</sup>

After the conquest of Egypt by the Caliph Omar, the Arabians became more and more alive to the value and advantages of science.<sup>(2)</sup> It is true that, in the blind wantonness of barbarism, they destroyed the famous Alexandrian library; as, in their after-subjugation of Persia, they also did all the books treating of the philosophy and idolatrous worship of that nation; but there is ample evidence to shew, that copies of the best Greek writers escaped the conflagration, and that the Christians, who thus fell under the Moslem yoke, and who were principally Syrians, set about translating a great many medical writings into the language of their captors, as well as a variety of productions in philosophy, poetry, and natural history; so that not only did the study of physic seem peculiarly adapted to the genius of that enthusiastic people, but they devoted themselves to its cultivation, under the happiest auspices.

Medicine having thus been introduced among the Arabs, principally through the medium of translations from the Greek, the establishment of a college at Bagdat by the Caliph Almanzor,<sup>(3)</sup> gave it a permanent footing. Public hospitals and laboratories were also established for the benefit of the students, who are said to have at one time amounted to not

(1) Abulfeda, *Annal. Moslem*, vol. i. p. 220.

(2) Sprengel, *Histoire*, tom. ii. p. 251.

(3) Elmacin, *Histor. Saracen.* lib. ii. c. 4. p. 122.

fewer than six thousand.<sup>(1)</sup> In the thirteenth century, the Caliph Mostanzer also founded an academy and medical school, handsomely endowed the professorships, and himself regularly assisted at the public prelections.<sup>(2)</sup>

Nor was the celebrated Haroun Alraschid—a name which the Arabian Tales has rendered so delightful, and which falls upon the ear like an echo of childhood—less zealous for the advancement of literature and science, as he encouraged and patronized the Syrian Christians to still more extensively translate from the Greek, by the most liberal benefactions.<sup>(3)</sup> To Almanon, however, was reserved the glory of reigning over a people thoroughly imbued with a love for learning and intellectual pursuits.<sup>(4)</sup> His munificent patronage extended over every department of art and science, and he came forward, on all occasions, to lend his hand to climbing merit, with a generous enthusiasm, which long rendered his name popularly illustrious. The example which he so nobly set, and whose influence was so beneficially felt throughout his dominions, was fortunately not destined to be lost on the other Mahometan states,—which gradually, one after another, emerged from semibarbarism into the sunlight of civilization.

Passing over Ahrun, a priest of Alexandria, and

(1) Leo African. apud Fabric. Biblioth. Græc. vol. xiii. p. 274.

(2) Itinerar. Benjam. Tudel. 1633, p. 75.

(3) Abulfarag. 235. Chron. Syr. 139.

(4) Pococke's Specimens of Arabian History, p. 166.

cotemporary of Paulus Ægineta, who wrote a work in thirty books, entitled the Pandects,<sup>(1)</sup> some fragments of which are preserved in the pages of Rhazes—Simeon Taibutha, whose writings on medicine are lost,<sup>(2)</sup>—and Dschribail, the favourite physician of Haroun Alraschid,<sup>(3)</sup>—we come to the more distinguished name of Tahiah-Ebn-Masawail, or, as more commonly written with us, Mesne.

Mesne the Elder was a Chaldean of the Christian religion, who had joined the Nestorian sect. Settling at Bagdat, where his talents attracted great attention, he was appointed physician to the son of Haroun Alraschid, the viceroy of Korassan, and so successfully succeeded in inspiring the young prince with a love for letters, that, when he afterwards ascended the throne, he summoned together all the principal scholars in his dominions, and portioned among them the task of translating into their own the valuable works in every language. That of rendering some of the Greek authors fell to the share of Mesne, and he is said to have accomplished it with an ability that greatly extended his reputation.

Of the writings of the elder Mesne, we possess only some fragments, preserved by Rhazes.<sup>(4)</sup> From these we learn, that he was remarkable for that aversion to the use of purgative medicines, which afterwards so prominently characterized the practice of many Arabian physicians. When compelled, how-

(1) Elmacin. Histor. Saracen. p. 123.

(2) Barhebr. Chron. Syr. p. 60. Russel's State of Science at Aleppo, p. 6.

(3) Elmacin. lib. ii. c. 6. p. 155. Abulfarag. p. 235.

(4) Rhazes, lib. vi. vii. *et passim*, particularly lib. xviii.

ever, to the prescription of laxatives, he combined them with such particular substances—as roots of violet, or juice of lemon—as were supposed to counteract their baleful effects. Powder of pine-bark, and decoction of hyssop, were used as emetics; and as a styptic in violent diarrhœas, he had recourse to the rennet of different animals, particularly hare. He attributed the small-pox to a fermentation of the blood, which necessarily takes place in all constitutions at some particular period of life.<sup>(1)</sup>

His scholar Honain-Ben-Izhak also acquired a high reputation, from the value and variety of his translations from the Greek writers, especially Hippocrates and Galen, Pliny, Alexander of Aphrodisium, Ptolemy, and Paulus Ægineta. In short, he was little less than the Dr Bowring of his day.

Honain is one of the earliest instances of mere learning leading its possessor to high civil preferment; having, as the reward of his intellectual industry, been created Bashurah of Bagdat,<sup>(2)</sup> as well

(1) *Vide* Sprengel, *Histoire*, tom. ii. p. 271-2. An Arabian, named Abi-Osbaia, wrote the lives of more than three hundred Mahometan physicians, Arabs, Syrians, Persians, and Egyptians. About a century ago, Dr Mead, with his usual munificence, defrayed the expense of having several of these translated from the original; but they were found so rambling, disjointed, and full of puerile stories, that the thing proceeded no farther. His work appears to have been little more than a calendar of the court physicians; and a record of the generosity of the Caliphs towards them. In the catalogue scarcely a name worthy of remembrance is recorded, except those of Mesue, Rhazes, and Avicenna. We owe our principal information regarding the early history of Arabian physic, to the *Almalcei*, or “Royal Work” of Ali-Abbas, which was written about the year 980, and of which we shall hereafter come to speak.

(2) Barhebr. *Chron. Syr.* p. 170. Abulfarag. 264.

as chief physician to the Caliph Motawakkel.<sup>(1)</sup> Some original treatises of his are still extant, but they are of no great value; and he is principally indebted for his reputation to his excellence as a translator. He is supposed to have died from poison taken by his own hand. His sons Izhak and David both likewise distinguished themselves, in the same department as his father.<sup>(2)</sup>

Jahiah-Ebn-Serapion flourished about the beginning of the ninth century, according to Sprengel, and towards its conclusion, according to Freind.<sup>(3)</sup> From having been born at Damascus, and thence styled Janus Damascenus by Albertus Torinus,<sup>(4)</sup> it has caused him to be confounded very frequently with Mesue the elder,—although quite a distinct person, as Hensler has most satisfactorily shown.

The work of Serapion, entitled *Kannach*, or the Collector, was originally written in Syriac,<sup>(5)</sup> and afterwards translated into Arabic by Musa-Ben-Ibrahim Khodaith. It is an attempt, although perhaps not a singularly successful one, to reconcile the principles of the Greek medicine with the modern dogmas. He adopts the same order and classification as most of his distinguished predecessors, and

(1) Casiri, vol. i. p. 287.

(2) Toderini, Litterature de Turcs. Abulfeda, vol. ii. Abulfarag, p. 266.

(3) Freind places Serapion about 890 (Hist. vol. ii.); Rene Moreau as early as 742 (De Venæsect. in Pleur.); and Wolfangus Justus as late as 1066. (Chronol. Medicor.) Truth here, as in many things, seems to lie between. We lean to Dr Freind.

(4) Vide the edition of his works printed at Basle in 1543.—Sprengel reckons it by no means so correct as the earlier translation by Gerard of Cremona.

(5) Casiri, vol. i.

from time to time happily brings in the results of his own observation and practice. He supposed phthisis to be occasioned by humours proceeding from the head to the lungs, and finally producing organic disease there. For the cure of dysentery, he advises boiled milk, in which red-hot iron has been dipped. His account of the diseases of the spleen and liver are very exact; and he describes a species of jaundice arising from the former, and operating on the system through the latter.

Cotemporary with Serapion lived Jacob Alkhen-di, one of the most voluminous and celebrated of the Arabian writers. Being a person of fortune and high descent, no pains were spared on his education, which was ample, and enabled him not only to distinguish himself in medicine, and its then fashionable concomitant, astrology, but also as a philosopher and mathematician. Casiri has given us a catalogue of his writings, among which are a translation of Ptolemy, and a commentary on Aristotle. They amount to not fewer than two hundred in number.<sup>(1)</sup>

The psychological and philosophical speculations of Alkhen-di, called down upon him the persecutions of the orthodox Mahometans, and he was stigmatised as a magician, although to this appellation he appears to have earned no better title than from his attempts to engraft the doctrines of modern platonism on medicine;<sup>(2)</sup> and, although accused by Averrhoes of having embraced a creed almost incompre-

(1) Casiri, vol. i. p. 353. Herbelot, p. 469.

(2) Bayle, vol. i. p. 135.



hensible from its subtlety, he does not appear more reprehensible in this respect than most of the other writers of his age and country.

These very mysticisms are, however, highly curious in themselves, and are occasionally well worth the attempt at unravelling. Following the example of Galen, who endeavoured to trace the properties of substances to their elementary qualities, he endeavoured to apply the doctrine of geometrical proportions and of musical harmony to this end, and so to account for the action of compound medicines.<sup>(1)</sup> The idea was highly ingenious in itself, and managed as it was by a person of such talents as Alkhendi, took well with many who could not comprehend it; and establishing itself among the Arabians, continued a fashionable sophism with them down even to the fifteenth century.

As nearly as we can unfold it, his doctrine regarding the degrees of medicaments was this.<sup>(2)</sup> He made his first degree depend on the multiplication of a mixture which was equal to two. His second to that of the whole of the first degree, multiplied by two. His third to that of the second degree also multiplied by two. Thus the total of the second degree is the quadruple of the equal mixture; and that of the third eight times as much. The total of the fourth degree is equal to a uniform mixture of the sixteenth kind.

(1) Alchind, de Medicinarum Composit. Gradibus. Opp. Mesuæ, Ed. Mar. Venet. 1562.

(2) See Sprengel, Histoire, tom. ii. p. 282.



Alkhendi touches slightly on the doctrine of caloric, from his observation of the effect produced from the commixture of hot and cold substances; and comes to the conclusion, that, if the quantity of cold ingredients form one-half of the hot, that the result will be a compound hot medicine in the first degree. If the quantity of cold substance is a fourth as much as that of the hot, then the medicine obtained will be a hot one of the second degree; and if the total of the cold matter forms an eighth part of the hot, the compound is a hot one in the third degree.<sup>(1)</sup>

It is to Galen, as we have already remarked, that we owe the suggestion of this singular hypothesis regarding the compound and elementary qualities of medicaments; and taking his great authority—in the present case a very problematical one—for a foundation, Alkhendi constructed his elaborate sorites, which, however amusing to the philosopher and student, was not founded in reality, and, of course, could never be available in practice.

Another contemporary of Serapion was Ebn-Korrah, sabeen of Haran, who rose to great distinction at the court of the Caliph Motadhed; and composed in opposition to Alkhendi, a treatise on the arterial repose between the diastole and systole. Besides his works on medicine, he wrote voluminously on mathematics, astronomy, and philosophy in general.<sup>(2)</sup> Both his son and grandson were Principals

(1) Alchind, c. ix. p. 473.

(2) Casiri, vol. I. p. 386.

of the Medical College at Bagdat; and the latter, Thabet-Ebn-Senan, was likewise physician to the Caliph Arradi-Billah.<sup>(1)</sup>

Before proceeding to the mention of Rhazes, we may notice the work of Aban Guesith on the properties and effects of medicaments, which appeared in his time, and which grounded the efficacy of remedies on something like the following principles.<sup>(2)</sup> In the *first* place, that their *modus operandi* ought not to depend on accidental circumstances or qualities; as, for example, it signifies little as to its effects whether water be hot or cold. *Secondly*, that the malady in which such a remedy ought to be prescribed should be simple, such as hectic fever, arising from dryness and heat. *Thirdly*, that attention should be paid, not only to the kind of medicine prescribed, but to the particular temperament of the patient, as much of its efficacy necessarily depends on that circumstance. *Fourthly*, that the medicinal properties had recourse to should be proportioned to the violence of the disease. *Fifthly*, that remark should be made whether the effects are exhibited immediately, or only by degrees. *Sixthly*, that remedies should act at all times, and in all situations. *Seventhly*, that their action on the lower animals should be compared with that on man. And, *lastly*, that a grand and permanent distinction should be established between medicinal and alimentary sub-

(1) Abulfarag. p. 317.

(2) Aben Guesith, De Simplic. Medic. Virtut. Opp. Mesuæ, p. 467.

stances, the latter operating solely from their nutritious qualities.

From the circumstance of Aben Guesith's theory having obtained a strong and extensive hold on the minds of the medical practitioners of Arabia, and served them for ages as the best explanation of the manner in which medicaments operate on the human frame, I have thought it necessary to give this brief outline of his curious, but sufficiently whimsical and hypothetical, doctrines. The subject is one, however, well worthy consideration ; and until we arrive at more determinate opinions regarding the manner in which particular substances operate on the animal economy, the practice of medicine must ever remain one of much uncertainty. From the various kinds of alvine evacuations produced, it is quite evident that purgatives, both mineral and vegetable, influence more especially some particular portion of the alimentary canal ;—this the stomach, that the liver, a third the small, and a fourth the great intestines ; and by proper regard to this subject, were it one with which we were better acquainted, I have no doubt that much additional light would be thrown, not only on the site and nature, but on the management of disease.

We come now to Mahomet Aboubeker Arrasi, commonly designated Rhazes, one of the great names in the history of Arabian physic, and of which it has just reason to be proud. He was born at Ray, a city of Irak ; so probably derived his surname from his birth-place. In early youth he shewed a strong

turu for music, which he cultivated with all the ardour of his enthusiastic mind, but afterwards abandoned its fascinations for the study of medicine, which, conjoined with general philosophy, formed the more grave and worthy occupation of his riper years. His genius and enthusiasm at once attracted attention, and his successful practice was not long in raising him to celebrity. He was appointed director of the hospital, first at Bagdat and then at Ray, where he was in high esteem with the governor of Korassan, Almanzor-Ebn-Izhak, nephew to the Caliph Muktasi, and to whom he dedicated his great medical work on the treatment of diseases.<sup>(1)</sup> He also delivered lectures in the College of Bagdat, in which he was by far the most distinguished professor, elevating its character as a school of physic, and attracting students from all parts of the country.<sup>(2)</sup> At an advanced period of life he became blind from cataract, and could not be prevailed on to undergo an operation for its cure, although, from the nature of the case, his surgeons thought it likely to be successful. In his Aphorisms,<sup>(3)</sup> he himself attributes his loss of sight to the too free and frequent use of lettuce, with what reason seems doubtful. Yielding to the popular philosophical creed of his day, he embraced the doctrines of modern Platonism, into which he interfused not a little of the baleful scepticism of the Pyrrhonists.<sup>(4)</sup> The time when Rhazes was

(1) Abulfarag. Hist. Dynast. p. 292.

(2) Abulfeda, vol. ii. p. 346.

(3) Aphorism, lib. iii. p. 92.

(4) Abulfarag. p. 78.

born has not been determined, and the year of his death is also matter of dispute. After examining the authorities of Abulfaragins, Abulfeda, and Casiri, Sprengel comes to the conclusion that he died in 923;<sup>(1)</sup> Freind says at eighty, in 932;<sup>(2)</sup> Rene Moreau contends that he was alive in 996;<sup>(3)</sup> Champier in 1070;<sup>(4)</sup> Vander-Linden and Wolfgangus Justus in 1080.<sup>(5)</sup> But if it be true that he lived to the age of 120, which some maintain, there is a possibility, as Portal observes, of even reconciling all these contrarieties of opinion.<sup>(6)</sup>

The Arabic historians speak of Rhazes as one deeply skilled in almost all sciences, as well as in medicine; and Ali Osbaia reckons up no less than 220 treatises of which he was the author. He was a distinguished astronomer, and was reported to have possessed great skill in alchemy,<sup>(7)</sup> on which he wrote twelve books.

In the principal of his medical writings, *Hawi* or the *Continet*, his accounts of diseases are huddled together without the least regard to nosological arrangement. But, from the treatment of several not

(1) *Histoire*, tom. ii. p. 286.

(2) *History of Physic*, vol. ii. p. 45.

(3) *De Venæ Sect. in Pleuritide*.

(4) *De Claris Medicinæ Scriptoribus Veteribus ac Recentioribus*.

(5) *De Script. Med. in Chronol. Medicor. Holtingen Analecta*.

(6) Portal, *Histoire de l'Anatomie*, &c. tom. i. p. 140.

(7) Arnold de Nova Villa compliments Rhazes on his profound knowledge in this pseudo-science. "Rasls, vlr in speculatione clarus, in opere promptus, in iudicio providus, in experientia approbatus, specialiter nobis aperuit introductionem, in libello suo de concordia philosophorum et medicorum." *De Divers. Intent. Morb.* Basil, 1585.

being even hinted at,—from the occasional barbarous obscurity of the style,—from the author himself being sometimes referred to in the third person,—and from the mention of several Greek physicians who lived after Rhazes himself, it is quite evident that it has not come down to us without at least many interpolations. Indeed, Ali Abbas himself confesses,<sup>(1)</sup> notwithstanding all his generous enthusiasm for the merits of his predecessor, that the *Hawi* is by no means the best proof of its author's taste and judgment; and Abulfaragius expresses his belief that the real work never was published at all, having fallen, after the death of its author, into the hands of one Ison; that the governor, for a considerable sum of money, purchased the other papers left by Rhazes, and that his disciples and admirers arranged these, and studied them with care.<sup>(2)</sup>

From anatomy being a branch of study rigorously interdicted by the Mahometan religion, it may be readily inferred that little progress was made in that department by the Arabian physicians,<sup>(3)</sup> who were

(1) *Prologomena*, p. 1. d.

(2) *Barhebr. Chron. Syr.* p. 172.

(3) One of the religious prejudices against dissection among the Mahometans was, that the soul did not suddenly forsake the body, but lingered in some particular portion of it for some time after apparent dissolution, so that the dismemberment of it might be a species of hideous martyrdom. Another was the belief, that the dead are judged in their tombs by the angels Nakir and Monkir, and that it was necessary to appear at their dread tribunal entire. Lord Byron has made a beautiful allusion to this latter sublime superstition in the "*Giaour*;"

"Thou, false infidel, shalt writhe  
Beneath avenging Monkir's scythe."

When Toderini asked a mufti if it was allowable to practise human dissec-



thus compelled, almost slavishly, to abide by the writings of the Greeks. But although the works of Rhazes are not particularly remarkable in an anatomical point of view, they are much more so than Portal seemed to be aware of, when he said that they contained no observations different from those of his predecessors.<sup>(1)</sup> In treating of the operation for fistula lachrymalis, he cautions against wounding the external or anterior branch of the ophthalmic nerve—a branch mentioned by none of the Greek writers—and in modern days particularly pointed out by Willis.<sup>(2)</sup> He also pointed out the laryngeal nerve, and distinguished it from the recurrent, which is sometimes double on the right side.<sup>(3)</sup> The merit of this discovery has also been unjustly claimed for recent times.<sup>(4)</sup>

Rhazes is the first who has given a description of spina bifida, which he defines to be a corruption of the bone, with swelling and fluctuation. He believed the disease to commence in the medullary substance of the bone, by degrees affecting and destroying the outer lamellæ, and causing pain alike by pressure on the spinal chord, and distention of the periosteum.<sup>(5)</sup> In treating of cancer, he condemns

tion, he was told that the question itself was an infringement of their divine law.—*Litterature des Turcs*, p. i. p. 127.

(1) *Hist. de l'Anatomie*, tome i. p. 142.

(2) *Continent. lib. ii. c. 5.*

(3) *Continent. lib. iii. c. 4.*

(4) Wrisberg in *Commentar. Soc. Gætt.* 1780.

(5) *Continent. lib. xxviii.*



all operation, where adhesions are formed, as cruel and unavailing; and says, that the knife ought never to be used, but in cases where the extreme fibres can be destroyed.<sup>(1)</sup> Haller has attributed to him the discovery of setons; but this is not the case, having already shown that they were used by Ætius.

We learn from Rhazes, that many surgeons of his time cured ulcers and fistulous sores by compression. He reduced dislocations and fractures by machines. He regulated the use of plasters and ointments, according to the doctrine of Alkhiendi about elementary qualities, applying drying ones to humid parts, and humid ones to dry. He attributed glandular ulcerations to constitutional causes. His account of hernia is better than any to be found in the Greek writers. Like Acrel, he cured trichiasis by cutting out a slip of the eyelid.<sup>(2)</sup> His notions regarding bloodletting are worthy of notice. In hepatic inflammations he recommends opening the basilic vein of the right arm, because he supposed it to have more direct communication with the vena cava. In hæmoptysis, he occasionally bled at the feet, in reference to the doctrine of metastasis. He tells us that the quantity of blood necessary to be drawn, in particular cases, must be regulated by the strength of the patient; but that neither age nor infancy should be considered as obstacles to the operation, when circumstances are urgent. In bites from rabid

(1) Rhazes ad Almansor. lib. xvi. c. 9.—Freind, vol. li. p. 55.—Portal, tome i. p. 144.

(2) Acrel, *Chirurgiska*, p. 43. Stockholm, 1775.

animals he cauterized the wounds in the first instance, and then prescribed emetics for the purpose of expelling the black bile—the evacuation of which was reckoned by the ancients as an indispensable step, in all cases of delirium and furious excitement.<sup>(1)</sup>

The pathology of Rhazes is founded on that of Galen, with a sprinkling of the leaven of the Methodics. His rationale of fever is nearly the same as that of his great predecessor, nor is his mode of treatment particularly different. He distinguishes between febrile heat, and heat not febrile; and between constitutional or general, and symptomatic fever.<sup>(2)</sup> He considered phlegm as the only secretion that could be re-absorbed, and again converted into blood; all others becoming extraneous, and requiring expulsion by art. He says that putrid fevers are invariably characterized at their commencement by symptoms denoting crudities in the stomach, and by a small irregular pulse; and also that a febrile paroxysm, not followed by moisture of skin, shows a strong tendency to putridity in the system.<sup>(3)</sup>

With reference to fevers generally, Rhazes states his opinion that they do not come to what can be legitimately termed a crisis; but that, when the powers of nature prevail over those of disease, the

(1) *Vide* passim, the *Hawi*, and *Ad Almansorem*, especially books xiv. xv. and xviii. of the former, and book vii. of the latter.

(2) Rhazes, lib. xvi. c. 2.

(3) Lib. xvii. c. 1. f. 344.

triumph is exhibited in the gradual convalescence of the patient.

His remarks on climate, season, situation, and constitution, denote the accurate and philosophic observer. Indeed, from the minute, exact, and excellent descriptions of disease to be found in his works, embracing not only the more commonly noted, but others of rare occurrence, and some for the first time remarked, there can be as little doubt that his opportunities of observation were immense, as that his genius and penetration enabled him to make the most of them.<sup>(1)</sup>

As might have been expected from the sanguine and enthusiastic temperament of a people so renowned for their imaginative feeling, and consequent love of the marvellous, the prognostic was that branch of pathology which the Arabians cultivated with the greatest devotion and success.<sup>(2)</sup> The won-

(1) Among others, we would note those of *Tic douloureux* and of *Hypochondria*. He has also remarked dropsy of the uterus—irregular fever from ulcerated kidneys—dysentery from calculous concretions in the bowels—and a number of other more rare cases.

(2) Rhazes, as might have been mentioned, was in his youth passionately fond of travel; and a story is related of him by Ali-Osbaia, that, passing one day through the streets of Cordova, in Spain, he observed a great crowd collected round a man, who lay on the ground insensible, and apparently dead. After examining him, it is said, for a moment attentively, Rhazes ordered a bundle of rods to be brought, which he distributed among the bystanders, and set them a-whipping him over all parts of his body, more especially the soles of his feet. Such a proceeding was at first regarded as a matter of whim and folly; but in a while the person began to stir, and to exhibit signs of animation. After bringing him completely round, Rhazes mounted his mule amid the acclamations of the crowd, and pursued his journey. It is added, that the fame of this supposed miracle soon filled the city; and, reaching the ears of the governor, he was waited upon and com-

derful facility with which Rhazes, among others, foretold the terminations both of acute and chronic diseases, tended to impress the Greeks with the loftiest conceptions of the medical knowledge of the Saracenic physicians. This belief was, perhaps, heightened, and not diminished, by their occasionally calling in astrologic aid, and consulting the horoscope;—pieces of quackery to which the stately mind even of Rhazes did not sometimes hesitate to unbend itself.<sup>(1)</sup>

The regimen prescribed by Rhazes, in acute diseases, is exactly the same as that recommended by Hippocrates; and the indications of treatment in the particular varieties of fever are grounded on the same conceptions of their cause and nature. He points out with great accuracy the cases which seem to require evacuants. In hectic fever, and phthisis, he recommends the free use of milk and of sugar. His dread of purgatives arose from the irritation which, in warm climates, they are apt to produce in the intestinal canal, and he therefore used them sparingly and with caution. He remarked, that colocynth rubbed on the skin has a laxative effect.

But what perhaps, above all, has tended to heighten the reputation of Rhazes as an author, is his treatise on Small-pox and Measles,—being the first account of these diseases ever given. In accordance with

plimented by him, as one “who was not only a skilful physician, but who could restore even the dead to life.”

(1) Ahrun, according to Haly-Ablas, (*Theoric. lib. i. prol. f.*) was the first who gave a description of small-pox; and it is alluded to by Rhazes him-

the physiological theories of his time, he contended that the latent principle of variola lay in the blood of the fœtus, and must consequently of a necessity reveal itself during some subsequent period of life. Although this led him to indulge the microscopic hope that it might be detected in the humours, it did not prevent his adoption of a most judicious plan of cure. In ordinary cases he confined himself solely to regimen. During the earlier stages he recommended cold water for drink; used vapour baths; and never administered purgatives without due consideration. He fostered the maturation of the pustules by warm fomentations, and their exsiccation by a mixture of oil of sesame and salt.<sup>(1)</sup>

Rhazes gave an account of the whole medical system of the Arabians, in ten books, dedicated to the Caliph Almanzor; and Freind has very well shown, that the materials which composed it are little more than a compilation from the Greeks. The first book, on Anatomy, being taken from Hippocrates, Galen, and Oribasius—the second, on Temperatures, being also from these, as well as from Ætius and Paulus—the third, on Aliments and Simples, from Hippocrates on Diet, Galen on Aliments and Simples, from Ætius, Oribasius, and Paulus—the fourth, on the Preservation of Health, from Galen, Paulus, and Ætius—the fifth, on Diseases of the Skin and Cos-

self in the 13th book of the *Hawi* (c. 8. p. 302.) The writings of Abrun have, however, been long since lost; and to the pages of the latter author we are indebted for the earliest account of the disease now extant.

(1) Rhazes de Varlol. et Morbill. *passim*.

metics, and the sixth, on the Regimen for Travellers, from Galen on the application of medicines to circumstances and situations—the seventh, on Surgery, from Hippocrates, Paulus, Oribasius, and Ætius—the eighth, on Poisons, from Paulus—the ninth, on the Cure of all Parts, from Hippocrates, Galen, Ætius, Oribasius, and Paulus—and the tenth, on Fevers, from the same.<sup>(1)</sup>

His little essay, “On the Qualities necessary to constitute a proper Physician,” is also worthy of remark. After pointing out the elementary learning which the mind ought to be stored with, he proceeds to say, that for a thousand years the professors of the healing art have been labouring to bring it to perfection, and, for the use of posterity, have left a summary of their experience in their writings. That, consequently, whoever studies these with attention, must acquire more real information in the short span of life, than the person who merely attends to the cases which may chance to fall under his particular observation; for that, unless we choose to profit by the recorded practice of our predecessors, we are likely to remain for ever ignorant of a great many forms of disease. He expressly adds, however, that medicine being a practical art, it requires more than reading to form the real physician; that he must be a person of accurate observation and sound judgment; be ever alive to what is passing before him;

(1) For this analysis I am indebted to Dr Freind (*History of Phys.* vol. ii. p. 48), who has specified also the particular books of the different authors to whom Rhazes seems more especially indebted in his compilations.



and able, from comparison of facts, to form proper conclusions in his own mind.<sup>(1)</sup>

The little tract of Rhazes regarding Quacks—whom he characterizes with a fidelity which makes his descriptions applicable to the knaves of our own day—is curious, from the circumstance of its being the first medical work in which *Eau-de-vie* is mentioned.<sup>(2)</sup> Strabo has spoken of arrack as known to the Arabians in the ninth century; but no physician, anterior to Rhazes, has taken notice of that liquor.<sup>(3)</sup> He mentions also different kinds of beer manufactured from rice, barley and rye.<sup>(4)</sup>

The aphorisms of Rhazes, although modelled on those of Hippocrates, are exceedingly inferior to them in almost every respect. Forgetting the meek spirit of true philosophy, he boasts of his own discoveries, and of the prognostics which he has established. In a strain of oriental magniloquence, he runs over the same topic again and again, imperfectly states some commonplace facts, and confesses his predilection for astrology. His observations on dietetics are better than those on medicines. He has, however, given some judicious remarks on marsh miasmata, on the use of cold affusion in ma-

(1) The reader is referred to a translation of this essay by Dr Frelind, and inserted in his History, vol. ii. p. 60, *et seq.* It is from the Ad Almanzor. Tr. v. c. 32.

(2) “Vina falsa ex cuccaro, melle et rico.” Rhazes ad Almanzor. Tr. 3. c. 7.

(3) Sprengel, Histoire des Decouvertes Geographiques, p. 103.

(4) Rhaz. ad Almanzor. T. 3 c. 6.



lignant fever, and on the use and abuse of the lancet, with reference to climate.<sup>(1)</sup>

Before turning from Rhazes, we must state, that, almost by common consent, he is allowed to be the first regular practitioner who made use of chemical remedies in his practice; and, from his mention of corrosive sublimate and mercurial ointment, various preparations of arsenic, the sulphates of copper and iron, saltpetre and borax, it is evident that the science had made much greater progress in his day than we are at all aware of.<sup>(2)</sup>

(1) Aphorism. lib. vi. p. 94.

(2) Liber Antidotarum, passim.

## CHAPTER II.

INTRODUCTION OF CHEMISTRY INTO MEDICINE—  
HALY-ABBAS.

THERE is little doubt that it is to the Arabians we owe a great many improvements in pharmacy; and, above all, the introduction of chemistry into medical science. It is true, to be sure, that, in Dioscorides, we find mention made of the sublimation of mercury, and that distillations are talked of by some of his immediate successors;<sup>(1)</sup> and it is also true, that there were others who, not contented with the simple purification of gold and silver, proposed to themselves the scheme of transmitting the baser and less perfect or precious metals into these, and thence termed chemistry the divine and the sacred art; boasting the possession of what they called the Philosopher's Stone. Chemistry became at length so absorbed in these researches, that Suidas defined it to be the compounding of gold and silver.<sup>(2)</sup>

(1) These operations were, we are told, performed in a Greek vessel termed αμβιζ, by adding to which the Arabic article Al, we have the word Alembic.—Vide Le Clerc, Histolre, p. 769.

(2) Χημεία ἡ τοῦ.

According to others, chemistry, even in the now accepted sense of the term, belongs to a still remoter age, and has been traced to the Egyptians; the word itself being supposed to be of Egyptian origin. Olaus Borrichius, who contends for this opinion, imagines that traces of the doctrine of Hermes are still extant;<sup>(1)</sup> and, among the Greeks also, some writings are preserved which are thought to refer to the same subject, particularly those entitled *Isis*, the prophetess, to her son *Florus*, *Democritus*, and the divine art of *Theophrastus*. These works are, however, with much reason, thought to be spurious, and the composition of after ages.

From another passage of *Suidas*, relating to the Emperor *Diocletian*, who lived in the third century, it appears that that monarch caused all the Egyptian books relating to chemistry to be burned, to extinguish the vain hope of the people that its processes, by furnishing them with riches, could put it ever in their power to cast off the Roman yoke.<sup>(2)</sup>

According to *Joseph Scaliger*, the earliest author on *Alchemy*, whose writings are preserved, is *Ju-*

(1) *Hermetis Egyptiorum et Chemiorum Sapiientia vindicata.*

Enfield, in the history which he has drawn up from *Brucker*, remarks, that "the art of alchemy has been said to have been known to the ancient Egyptians; and, from the founder of the Egyptian philosophy, it has been called the *Hermetic Art*. But we find no certain account of any attempt to effect the transmutation of metals earlier than the time of *Constantine*. In the fictitious sciences of astrology and magic, there can be no doubt that the Egyptians were adepts."

See *Plin. Hist. Natur. lib. xxx. c. 1.*

(2) *Dioclesian* himself was, as is well known, a dabbler in mysticism and the forbidden arts. His retirement and fantastical studies have afforded scope lately for a fine dramatic poem from the pen of *Mr Doubleday*.

lius Firmicus Maternus, who lived in the fourth century, under Constantine the Great. His having written in Latin, and yet made use of the Arabic denomination of the art, seems to me, contrary to the opinion of Le Clerc, to shew pretty conclusively, that he must have been conversant with some writings of that language, belonging to a previous age, which related to the same subject.

Be these things, however, as they may, there can be little doubt that it is to the Arabians we owe the introduction of chemistry into physic, as a direct and efficient auxiliary. Its cultivation among the disciples of the Alexandrian school, appears to have related solely to theosophical views.<sup>(1)</sup> It was a branch of study peculiarly adapted to the inquisitive and romantic spirit of the Arabians, a people who could with difficulty be calmed down to the dispassionate discussion of subjects of philosophical inquiry, and were too apt to give to every object the tinge of their own fancy and prejudices.

In the eighth century, appeared Abon-Moussah-Dschafar-Al-Soli, better known under the name of Gebir, whose work on alchemy is still extant, and who may, with strict propriety, be set down as the patriarch of the science.<sup>(2)</sup> In it he makes mention of several mercurial preparations, as the corrosive sublimate and red precipitate, of the nitric and mu-

(1) Sprengel, *Histoire de la Médecine*, tom. ii. p. 263.

(2) *Alchemia Gebri*, 4to, Berne, 1545. Professor Thomson of Glasgow, in his recent *History of Chemistry*, published as the third volume of Colburn and Bentley's *National Library*, has entered into a detailed account of some of the writings and opinions of Gebir, which are extremely curious.

riatic acids, lunar caustic, and several other chemical preparations.<sup>(1)</sup>

Le Clerc is also in error, when he disputes, in favour of Avicenna, the honour of first introducing chemistry into physic, as Dr Freind has ably shewn. From our account of the book of Antidotes, written by Rhazes, who was his predecessor, it is evident that that distinction legitimately appertains to him.

The next distinguishing merit of the Arabian school was the improvement which it effected in pharmacy, which it remodelled, and to which it gave an almost entirely new character. It established the properties of a great variety of substances, and introduced into use many which are still retained, both from the vegetable and the mineral kingdoms. The Arabs were the first people whose government gave their sanction and protection to particular formulæ for the composition of medicines. To them likewise we owe the idea of a dispensatory, the first work of this kind having been got up by Sabor-Ebn-Sahel, director of the College at Jondisabour, in the latter part of the ninth century.<sup>(2)</sup> After having enjoyed a high reputation for several ages, this was at length superseded, and placed on the list of superannuation by the improved work of Aboul-Hassan-Talmid, which became a standard one for the prepa-

(1) Gmelin's *Histoire de la Chimie*, P. i. p. 15-20.

See also on the subject of Gebir, Abulfefa, vol. ii. p. 22. Herbelot, p. 387. Casiri, vol. i. p. 441.

(2) This work was entitled the *Krabadin*.

See Abulfaragius, *Hist. Dynast*, p. 269. Assemani, *Bibl. Oriental*, vol. iii. p. 512.

rations of the Arabian apothecaries.<sup>(1)</sup> The subject was one over which the municipal authorities kept the strictest surveillance; and not only did they take the greatest care that no adulterations should be effected by the pharmacopolists, but also that the public should be supplied both with galenicals and chemicals at a reasonable price.<sup>(2)</sup>

When we consider how diametrically opposed was the philosophy of mind to the spirit of the Mahometan religion, it ceases to be matter of surprise, that the zealots of the faith ever looked on its cultivators with a jaundiced eye, and not unfrequently had recourse to proscription or persecution. Yet the Saracen princes had endowed so many excellent institutions throughout their vast dominions, for the encouragement of arts, sciences, and general learning, that the productions of their literati on almost every branch of knowledge multiplied exceedingly; and, had their value been at all equal to their number, they could not fail to have greatly elevated the general character of the people. Yet the fact is incontestable, that, notwithstanding the number of their works, and the high merits of their literature, at a period when all the other nations of the earth were plunged in the most profound ignorance, they made no direct progress in the march of philosophy; and it would be difficult to point out any great truth

(1) Abulfeda, vol. iii. p. 598.—Abulfarag. p. 394.

(2) “Ceux-ci étalent,” says Sprengel, “sous la surveillance immédiate du gouvernement, qui portait une attention particulière à ce que les médicaments ne fussent pas altérés ou vendus à trop haut prix,” tom. ii. p. 264.

which they either discovered or particularly illustrated.

It is true that when, by force of arms, the Mahometan despotism had effected a permanent footing over a large portion of the earth's surface, the restrictions against such studies as were originally judged inimical to its interests were less rigidly enforced ; but so engrossed was the common mind with the subject, which had so long undividedly occupied its faculties, that philosophy sought only employment in dialectic subtleties, tending to substantiate the truth and efficacy of their religious creed. In the eleventh century, the illuminati of Bassora formed themselves into a society,<sup>(1)</sup> for the purpose of purifying their faith from the heresies which had either crept in through time, or been fostered by the selfish knaveries of priestcraft ; and, among them, a great number of books were written to prove its alliance with the profoundest spirit of the ancient Greek philosophy. In these writings were exhibited great powers of metaphysical disquisition, and traces of acute and searching intellect ; but, giving up for party ends what was meant for the general good, all was rendered subservient to the furtherance of one great and engrossing purpose. Indeed the individual feeling of the Caliph Omar, when he ordered the Alexandrian library to be burned, seemed as yet quite indicative of the general mind ; the Koran was reckoned the Alpha and Omega of

(1) Abulfarag. *Histor. Dynast.* p. 330.



theoretical and practical wisdom. If books contained less they were superfluous; if more they ought to be destroyed.

From these circumstances, it followed that, like the dialecticians of the Alexandrian school, the servants of Bassora looked at all objects only on the side that suited their predilections or their prejudices, and were much less careful to adapt their principles to truth than truth to their principles. It was thus that emanation became one of their favourite doctrines; and, with this, alchemy and magic were so much allied, and so accordant to the genius and temperament of the people, that argument was at length in a great measure abandoned as a useless logical weapon; and the defence of the Moslem faith very appropriately handed over to the care and tutelage of alchemy, divination, and magic.<sup>(1)</sup>

(1) Many curious stories relating to the superstitions of astrology and alchemy are to be found in the pages of Abulfeda, Abulfaragius, and the Syrian Chronicles. The natural taste of the people led them towards the marvellous, and their physicians seemed quite inclined to humour that fancy. Astrology and the horoscope were consulted on all puzzling occasions, and the most absurd combinations of substances appear to have been exhibited, with the most unhesitating confidence in their efficacy. It is said that, when the Caliph Watek-Billah was dangerously ill of dropsy, his attendants told him that he might remain quite at ease, as they would insure his life for fifty years; and, at the very moment they were baking their boluses in an oven, the patient died. Thabeth-Ebn-Ibrahim, being born under the sign Jupiter, could tell at once, by feeling the pulse, what was a man's ailment. Sidalani, a pharmacopollst, made an immense fortune, by telling, from inspection of the urinary secretion, that the favourite mistress of the Caliph Almodhi was enceinte, and of a male child. Their quackery was not less bold than their soothsaying. The Caliph Abon-Odaula having been seized with intermittent fever, which assumed a quartan type, was first physicked and then bled by his doctor, who, being questioned as to the reasons for his practice, declared that he considered the disease a quotidian, occasioned by excess of blood and bile; but, as the exacerbation still returned every fourth day,

For the earliest as well as the best account of the ancient Arabian physic, we are indebted to the pen of Haly Abbas, surnamed The Magician, probably from the extent of his knowledge and acquirements, which, like those of our own Friar Bacon, are said to have been quite uncommon for the age in which he lived. About the year 980 appeared his *Al-Meleky*, or the *Royal Work*, which was intended to be a complete system of physic, and which was inscribed to Adadoula, the Caliph of Bagdat.<sup>(1)</sup> It acquired an unrivalled reputation among the Mahometan nations, was translated into Latin, in 1127, by Stephen of Antioch, and was regarded as the chief work of erudition among the Arabians, till superseded by the *Canon of Avicenna*. Haly Abbas died in 994.

Haly informs us in his preface, that he found himself called to the task, however incompetent for its execution, from no author having previously appeared, who had treated the subject exactly in what might be considered the most proper manner: and he has particularly pointed out, although not with

he had determined to get quit of the bile by phlebotomy, and the blood by purgatives. A practitioner of Antioch agreed to cure a patient, in consideration of the payment of a certain sum. The disease was a tertian fever; but, in a short time, instead of disappearing, it assumed a more aggravated type. The sick man rebelled, and the doctor took only one-half of the sum agreed on, probably knowing that his dupe ought to have had a grateful heart in having escaped with life.

(1) A translation appeared at Venice, in 1492, under the title *Regalis Disquisitionis Theoricæ libri decem, et practicæ libri decem, quos Stephanus Plut discipulus ex Arabica in Latinam linguam transtulit*. Another edition appeared at Lyons, in 1523, with the synonymes of Michael Capella. Stephen, as we have said, was his first translator.

the arrogance which some have ascribed to him,<sup>(1)</sup> wherein Hippocrates, Galen, Oribasius, and Paulus seem to be deficient. Indeed the very improvements themselves, made by the Arabs and Persians in the knowledge of pharmacy, materia medica, and chemistry, rendered a new systematic work on the general science of medicine a thing necessary and desired.

Notwithstanding the modest avowal of Haly Abbas, that he has only followed the Greeks, making such modifications in their modes of practice as seemed to be dictated and rendered necessary from the diversities of climate, we find in his Almeleky, a great many observations peculiar to himself. These are sometimes of considerable value, and the more so from having been strictly the results of his own personal observation in an extensive hospital practice—the sick room being the best school of information for the physician.<sup>(2)</sup>

Of the anatomy and physiology of the Almeleky, it is not necessary to say much, as, from causes already stated, the former is necessarily a mere transcript from the Greeks. This theory of diseases, and their symptoms, rests on the doctrine of the state of the attractive, the repulsive, and other forces.<sup>(3)</sup> He made some curious remarks on the

(1) Among others by Portal. In allusion to the supposed self praise of Haly, that writer says, “ C'est le propre d'un esprit mediocre d'admirer ses productions.”

(2) “ Ce médecin assure avoir recueilli la plupart des ses observations dans les hopitaux.” Sprengel, tom. ii. p. 302.

(3) Theor. lib. vi. c. 26.

pulse, especially with reference to temperature.<sup>(1)</sup> His observation that the young of both sexes exhibit a tendency to melancholy towards the approach of puberty, is not more remarkable for its nicety than its truth.<sup>(2)</sup> He has pointed out, with accuracy and precision, the influence of clothing on health; and the manner in which mineral waters act on the system. His observations on colic, attended by paralysis of the extremities, are also good, as are those for ascertaining whether cutaneous eruptions be or be not of a leprous nature.<sup>(3)</sup>

The treatise of Haly Abbas on dietetics is one of the best that ever was written, and is quite remarkable, if we take his age and nation into consideration. With the utmost exactitude he has laid down plans of regimen the best suited for the different varieties of the human constitution, and has written on the attention necessary to be paid to long contracted habits, alike in diet and general regimen, with a clearness and precision worthy of Hippocrates himself.<sup>(4)</sup> Not less excellent are his rules, necessary to be followed according to climate, age, temperament, season, and situation.

In treating of the *materia medica*, he follows the plans and principles of Aben Guesith, of which we have already endeavoured to give a short account; and his manner of determining the properties and

(1) Lib. vii. c. 3.

(2) Lib. ix. c. 7.

(3) Theor. lib. l. c. 24.

(4) Pract. lib. i. c. 13.

virtues of different substances is the same. He believed, like Honain, that purgatives operated on the system, not by attracting the peccant humours, but by altering and expelling them.<sup>(1)</sup>

In his management of particular diseases, he differed little from his predecessors, except in the practice of treating intermittents by the antiphlogistic regimen and laxatives.<sup>(2)</sup> In the earlier stages of small-pox he had recourse to local or general blood-letting: in other respects he followed Rhazes.<sup>(3)</sup>

The surgery of Haly Abbas had also a few distinctive features. From the idea that caustics were efficacious where a redundancy of the humours flowed to a particular part, he recommended their application for the cure of hydrocele.<sup>(4)</sup> In the management of dropsical affections his attention was always directed to the remote causes; and he preferred puncturing in the linea alba, a little below the umbilicus, in the operation for the relief of ascites.<sup>(5)</sup>

Jesus Hali, the son of Haly Abbas, was educated for a physician, under the immediate superintendence of his father, who is said to have bestowed so much pains on his instructions, that high hopes were entertained of his after-career. He was the author of a book on diseases of the eyes;<sup>(6)</sup> and appears to have

(1) Pract. lib. i. c. 15.

(2) Pract. lib. iii. c. 12.

(3) Lib. iv. c. 1.

(4) Lib. ix. c. 68.—c. 79.

(5) Lib. vii. c. 36.—Lib. ix. c. 41.

(6) De Cognitione Infirmorum Oculorum et Curatione Eorum. Venetis

been no common person. But, as in most cases where expectation is overstrained, the world appears to have been somewhat disappointed in him, and he never rose to extensive popularity,—a circumstance which, as Portal remarks, may have given him just reason to feel that “a great name is sometimes a heavy burden.”<sup>(1)</sup>

Casiri has mentioned some manuscript commentaries on the aphorisms of Hippocrates, together with several other medical works by Aladdin-Ali-Ebn-Haram-Alkarchi, which seem referable to the same age.<sup>(2)</sup><sup>1</sup> They are preserved in the library of the Escorial.

1499, cum Guidonis Cauliaci et aliorum scriptis chirurgicis, 1500, 1u Fol. cum Albucasis Chirurgia.

(1) “On a bien raison de dire qu’un grand nom est souvent un pesant fardeau.”—Histoire, tom. i. 140.

(2) Vol. i. p. 235.

## CHAPTER III.

## LIFE AND WRITINGS OF AVICENNA.

WE now come to the Arabian Sheikh Reyes, or Prince of Physicians, Al-Hussain-Abon-Ali-Ben-Abdallah-Ebn-Sina, better known under the abbreviated appellation of Avicenna—a person nearly as remarkable as our own Admirable Crichton for the extent and variety of his precocious attainments, and whose medical system attained a celebrity rivalled only by those of Hippocrates and Galen. Nor was his fame confined to his native country alone. His works were translated, abridged, and commented on; formed text-books for the professors in the principal schools of Europe, and were the oracles of medical knowledge for nearly six hundred years.<sup>(1)</sup>

(1) “Comme son système a dominé généralement pendant près de six cents ans, il est indispensable d’insister d’une manière particulière sur son histoire.” So writes Sprengel, and with great propriety of feeling.—The account of Avicenna given by Dr Freind is by no means in unison with the character of that excellent writer for liberality and candour. After confessing that the fame of the *Canon* was so great throughout Asia, that it was commented on and epitomized by several Arabian writers of the twelfth and thirteenth centuries, and had gained such a mastery over the schools of Europe, that no other doctrine was taught there, it is rather singular that the account of it should be dismissed in a page, or rather that no account of it should be attempted.



Avicenna was born in the three hundred and seventieth year of the Hegira, or the nine hundred and eightieth of the Christian computation, at Bokhara, in Khorassan—a place to which his father Hali had retired, under the emirate of the Caliph Nuhh, son of the celebrated Almanzor, to whom Rhazes inscribed his *Ten Books on the Healing Art*. Leaving this town in early boyhood, along with his parents, he grew up at Asschema, in Bocharia, to the age of fifteen; having long ere that time given many unequivocal proofs of that wayward, enthusiastic, and dauntless genius, for which he was afterwards so renowned. His powers of memory were so great, and are said to have exhibited themselves so early, that we are told, among other things, by himself, that, before he was ten, he could repeat the whole contents of the Koran. He was instructed by Abon-Abdallah of Nahel in grammar, dialectics, the astronomy of Ptolemy, and the geometry of Euclid;<sup>(1)</sup> but such were his capacity and progress, that he soon lost respect for the qualifications of his master, puzzled the honest man with logical propositions beyond his depth, and left his instructions for those of a merchant, who had attracted him by his arithmetical talents, and by his acquaintance with the Indian numerical tables.<sup>(2)</sup>

Removing to Bagdat for the farther prosecution

(1) Abulfeda, vol. iii. p. 92. Abulfarag, p. 356. Chron. Syr. p. 231. Vita Avicenn, per Sorsan.

(2) These tables, with some alterations, were afterwards adopted by the Arabians. *Vide* Orpen, Grammat. Arab. p. 12.

of his studies, he was taught philosophy by a disciple of Mesue the Elder, Abon-Nasr-Alfarabi, a distinguished peripatetician of his day ; and applied himself at the same time to the cultivation of medical science under a Nestorian, named Abon-Sahel-Masichi.<sup>(1)</sup>

With an ardent thirst after knowledge, an amazing capacity of apprehension, and an industry which scarcely allowed time for the refreshment of nature, it is not much to be wondered at, that Avicenna far outstripped all his cotemporaries. During the night, when his faculties were exhausted, he is said to have stimulated them into artificial exertion by the dangerous use of wine, and warded off the approaches of sleep by a thousand contrivances. But so absorbed was frequently his whole mind in his calculations, that when slumber did overtake him, he is said, in his dreams, to have solved problems, that baffled his waking hours.<sup>(2)</sup> Enthusiastic and impetuous in his temperament, no difficulties could daunt him, no obstacles intercept his progress ; and success, so far from satisfying his ardour, was only an incentive to still farther exertion. Whatever subject was selected by his fancy or intellect, he grappled with it until it was mastered ; and, when the accomplishment appeared beyond the reach of his unassisted powers, he had recourse to the fervent agency of prayer for assistance from Heaven. After this, he is said to have always found or fancied his

(1) Abulfarag, p. 208.

(2) Sprengel, Histoire, tom. II. p. 306.

faculties invigorated, and equal to whatever task he grappled with.

In the metaphysics of Aristotle, however, he seems to have found a book, to whose cipher he could for a long time discover no key. Somehow or other, it appears to have baffled all his powers of comprehension, having read it over and over not less than forty times, without fully mastering its contents. The perusal of an Arabian manuscript at length removed the veil from his eyes; the profound speculations of the great Greek metaphysician lay revealed before him, and he ever afterwards remained one of his most devoted admirers.<sup>(1)</sup>

Even so early as his sixteenth year, Avicenna had acquired distinction for his medical skill; and by the time he had reached eighteen, was so celebrated for a remarkable cure he had performed on the Caliph Nuhli,<sup>(2)</sup> that he was invited by Mahommed, the Caliph of Korassan, to attend him in his sickness. He was looked upon, even by the old and experienced, as a complete prodigy of learning, and his judgment was deferred to in a manner sufficiently calculated to flatter his utmost vanity.

We do not learn from any of the Arabic narratives whether or not Avicenna accepted the tempting offers held out to him; at all events, if he went to prescribe for Mahommed, he was not induced to take up his abode at his court, as we find him,

(1) Bernier, in his *Essay on Medicine* informs us, that the treatise which had such magical effects on Avicenna, was composed by Albumasar Alpharabius, an Arabian physician.

(2) Casiri, *Biblioth. Escorial*, vol. i. p. 269.

shortly after this, again at Dschordschan, where he successfully managed some secret malady with which the Syrian prince Kabus was afflicted.<sup>(1)</sup>

Returning at length to Ray, where he received the appointment of physician to prince Magd-Oddaula, he devoted himself sedulously to his studies, and produced an extensive work on the state of the arts and sciences, or rather a kind of cyclopædia of human knowledge, under the title of "The Utility of Utilities."<sup>(2)</sup> Be it remembered that the author was but yet on the verge of manhood—a youth in his twenty-first year.

Not long after this he was raised to the dignity of vizier, where, it is said that his knowledge of the laws, observant habits, strict impartiality, and indefatigable attention to affairs of state, acquired him great favour, and an almost unbounded influence over the public mind. But the life of Avicenna seemed destined to be a restless one; and, on some plea or other, it is generally reported that of having been accessory to a seditious plot, he was stripped of his honours, and ignominiously cast into prison, where he remained for several years.

He was one, however, like Sir Walter Raleigh, whose prison hours were to enrich the world; for it was principally while in this gloomy seclusion,

(1) The Syrian prince was in love. But the story has too great a resemblance to that told of Erasistratus, by Applan (De Bello Syriaco), to be credited without some hesitation. It is recorded, however, both by Abulfeda and Abulfaraglus, as well as by Avicenna himself (Lib. III. Fen 1. tr. 4.).

(2) L'ouvrage porte le titre de "Kitab alhasil wa Mahsoul."—Sprengel tome II. p. 307.—Casiri, p. 271.

that he composed his works on theology, mathematics, astronomy, metaphysics, logic, morals, philology, natural history, natural philosophy, and medicine. It was to the last, however, that he applied the principal bent of his mind; and he devoted himself to a cultivation of its different branches with unwearied assiduity. It would appear that his other treatises, even on subjects so abstruse as some of those mentioned, were undertaken merely as occasional relaxations from that study, which he regarded as the principal occupation of his life.

Upon being at length restored to liberty and the active duties of a physician, the death of his patron and protector Oddaula again appeared to endanger his freedom, and, withdrawing from public notice, he remained for a considerable time concealed in the house of an apothecary, employing his solitude in the consideration of literary topics. His retreat being, however, accidentally discovered, he was carried a prisoner to the castle of Berdawa, where, after four months' confinement, he contrived to effect his escape in the dress of a monk, and fled to Ispahan. He was there received with open arms by the court of the Caliph Ola-Odaula. Every year increased the splendour of his reputation. He had no rival in his profession; and his celebrity, as a man of science, was nearly equal to his fame as a physician. But he was not destined to attain old age, or sun himself in repose under his laurels. However great may have been the original vigour of his constitution, the intensity of his studies, together with

the hardships and irregularities of his life (for he is said to have been too much the dupe of profligacy and dissipation), tended to cut short his days. His health became gradually undermined, an inflammatory attack in the intestines being followed by epilepsy; and, while on a journey to Hamaan, in company with the caliph, his fate was accelerated by an overdose of opium, accidentally administered by his servant. He died in 1036, almost immediately after reaching that city, in the fifty-eighth year of his age.<sup>(1)</sup>

In this sketch of the life of Avicenna, we have mentioned some circumstances, for the credit of which, it may readily be believed, that we do not confidently vouch;—but the fact of these being out of the common way, is no reason why they should not be recorded; although it is but too general a practice to throw a doubt over the romantic annals of real life, as well as to judge the conduct of such wayward spirits, as Averrhoes, by the tame standard of mediocrity.<sup>(2)</sup> The history of his mind appears

(1) "He died in the 58th year of his age," says Freind; "or rather, if we calculate to a nicety, the 56th.

"The Arabic years are *tunar*; and therefore, though the era of the Hegira began in A. C. 622, some allowances must be made when we reduce that to the years of Christ, as has been done by the learned editor of Abulfaragius with regard to that history."—History, vol. ii. p. 71.

(2) So high was Scaliger's opinion of the merits of Avicenna, that he declared it absurd in any one to pretend to the title of physician, who had not studied his works.—(Scaligerian. prim. p. 18.) Leo Africanus asserts, on the contrary, that he was "in medicina luscus, in philosophia cæcus."—(De Illustr. Med. et Philos. Arab. p. 270.) Manard was completely blind to his merits, (Epist. ix.); and Dr Freind, after confessing "that you won't suppose, I believe, that I have gone through him in any regular course of read-



to have been no less remarkable than that of his actions. Born with the highest capacities for excellence, he was too apt to follow caprice instead of principle—the flickering meteor for the steady star. Yet, when we consider the undoubted extent of his fame, and review his writings, stripped of the adventitious circumstances, which tended to give them notoriety, it appears evident that he must have been prodigiously indebted to personal accomplishments and attractions, for the sway which they acquired over the minds of men. What must have greatly contributed to the marvel which the works of Avicenna created among his contemporaries, was the fact of their coming from a person apparently absorbed in the pleasures of the world, and giving his whole mind to the gratification of appetite. It was apt to be overlooked, that, with this seeming carelessness, were united fits of industry fully as engrossing to his faculties, and of which his fluent and facile genius made the utmost. It is hence that the character of Avicenna has had so many panegy-

ing," (vol. ii. p. 71), denies him a single idea but what he has purloined from others

Before accusing Avicenna of plagiarism, want of arrangement, or neglect of perspicuity, let the candid reader remember, that the best Arabic scholars have declared the common versions of his works to be barbarous and incorrect to an extreme degree. Plempius, Densingius, and Velchius, who were famed for the extent of their oriental acquirements, have each translated select portions of his writings, which are very different from what were circulated as such; and they have stated as their opinion, that Avicenna wrote as purely and elegantly in his own language, as ever Cicero did in Latin, or Boccaccio in Italian. It is melancholy and vexatious to think, as Le Clerc well remarks (*Histotre*, p. 776), that such an author should be totally disfigured and disparaged by the ignorance or unskilfulness of his translators.



rists, and so many revilers; that he has been magnified to heaven by some, and sunk below the level of humanity by others.<sup>(1)</sup>

We have already noticed his "Utility of Utilities," a work of immense general learning and research, composed and given to the world in early youth; but it is only to his great medical work "the Canon," that the present work directs our attention.<sup>(2)</sup>

It is somewhat difficult to account for the despotic supremacy which the Canon of Avicenna acquired over the mind of the medical world; for, setting aside Hippocrates and Galen, the Hawi of Rhazes is a production nearly as complete. The most probable solution of this difficulty is to be sought for in the scholastic spirit of the age, not only in which Avicenna lived, but of those that immediately succeeded it. Versed in the subtleties of the schools, he knew how to wield their influence to his purposes. Instead of the inconclusive reasonings, and the contradictory assertions, occurring so

(1) "Quoiqu'il y ait peu d'auteurs dont on ait dit autant de bien et autant de mal que d'Avicenne."—Sprengel, Hist. tome ii. p. 308.

In another point of view, he may be regarded as a striking illustration of the fact contained in the lines of the poet:—

He, who ascends to mountain tops, shall find  
The loftiest peaks most wrapt in clouds and snow;  
He who surpasses or subdues mankind,  
Must look down on the hate of those below.

Childe Harold.

(2) Some Spanish writers have gone the length of denying that Avicenna ever wrote the Canon at all, (Garibals, dans l'Essai sur l'Espagne); and assert, (on what authority they themselves only know), that it was the joint composition of thirty physicians and philosophers.

frequently in the pages of Rhazes, we have the most perfect harmony of general outline, the most elaborate filling up, and the greatest precision of detail. His system is imposing as a whole, and there is a beautiful adaptation throughout all its different parts.

The Canon of Avicenna consists of five books, which have their subdivisions. He first treats of the general principles of medicine, which are not much different from the Institutes of the Galenical physicians. After giving a general definition of medicine, and specifying its subject, he proceeds to consider the elements,—the primary qualities,—the natural, vital, and animal faculties,—and the causes and symptoms of diseases.

For the cure of diseases he proposes three different kinds of means; the first is the proper regimen for restoring the balance of health; the second the use of medicinal substances; the third manual operation.

The second book treats of simple medicaments derived from the mineral, animal, and vegetable kingdoms. The catalogue of Dioscorides is here amplified by the contributions of Serapion, Mesne, and others.

In the third book, which is as large as all the others put together, we have his account of the practice of physic. When touching on the pathology of Avicenna, we shall mention some of its peculiarities. He does not content himself with a mere account of the signs, causes, and cure of diseases, but

criticises whatever has been written regarding these, and gives an anatomical description of the affected parts.

The fourth book relates to diseases which affect only particular parts or portions of the body. In this section he treats of crises and critical days; small-pox and measles; phlegmons, erysipelas, abscesses, cancer, and gangrene; together with dislocations, fractures, and a variety of miscellaneous matters.

The fifth book consists of a mere pharmacopœia or receipt book, for the compound medicines prescribed by the Arabian practitioners.<sup>(1)</sup>

From the changes which, from age to age, were taking place in the nomenclature of plants, it would be almost an impossibility to give any thing like a correct account of the *Materia Medica* of Avicenna. The Arabian physicians were little conversant with natural history, and consequently were liable to fall into error in their descriptions; nor is Avicenna any example to the contrary. He recommended the administration of gold, silver, and precious stones, with a view to purify the blood.<sup>(2)</sup> He describes opium as cold to the fourth degree, and hence apt to derange the functions of the stomach, or cause death by extinguishing the natural heat.<sup>(3)</sup> Contrary to the opinion of Rhazes, who regarded rhu-

(1) For a further analysis of the Canon of Avicenna, the reader is referred to Le Clerc, *Histoire*, p. 778-1.

(2) Lib. ii. c. 65. c. 78.

(3) Lib. ii. c. 526.

barb as a stimulant, he classes it among articles of a cold nature.<sup>(1)</sup> His list of substances that operate by recruiting the animal spirits, is long and elaborate beyond parallel ; but his rules for judging of the mode by which medicinal substances operate on the frame, are not particularly different from those given by preceding writers.<sup>(2)</sup>

Sprengel thinks that Abulfaragins has rightly judged, in valuing the practical details of the Canon of Avicenna as considerably below what are to be found in the work of Haly Abbas.<sup>(3)</sup> Almost all his principles are gleaned from Galen and Rhazes ; and although some few are peculiar to himself, they are not such as to bestow a new character on his system.

Together with the three causes of disease still recognised, the predisposing, occasional, and proximate,<sup>(4)</sup> Avicenna introduced from the peripatetic school, the material, residing in the viscera ; the formal, in the forces and temperaments ; the agitating or active, in things alien or not natural ; and the final, in the functions of the organs themselves.<sup>(5)</sup>

(1) Lib. iii. fen. 16. tr. 1. c. 4. Compare with Rhaz. ad Almansor. lib. iii. c. 47. f. 16.

(2) De Medicin. Cordialibus et Cautica. tr. 1. c. 9. Venetiis, 1544, folio. Basileæ, 1556, folio. Groningæ, 1649, in 12mo.

(3) It is to the days of Avicenna that the absurd custom of gilding and silvering pills is to be referred ; and perhaps arose, as Sprengel supposes, (Histoire, tom. ii. p. 320), from the belief then entertained of the energetic sanative qualities of gold and silver. Mention is made of the practice by Avicenna himself in the fifth book of the Canon. (Summ. i. tr. 9.)

(4) Histor. Dynast. p. 326.

(5) Lib. i. fen. 2. doct. 2. c. 1.

He multiplied the number of the faculties, and subdivided them with considerable ingenuity ; more especially as regards that of nutrition, which he considered at three stages. The first, while the blood is being converted into the humour, whence new matter is furnished ; the second, while the fluid thus modified is combining with the parts which it is destined to nourish ; and the third, when the matter deposited has assimilated itself with those parts.<sup>(1)</sup> These he terms the secreting, the adherent, and the assimilating powers.

His doctrine of the humours resembles that of Galen ; but he made some subtle and scholastic distinctions, more adapted for paper than practice. He divided the organs into active and passive ; the latter were the organs of sensation, and the heart,—which, like Aristotle, he believed to be destitute of energy.

The anatomical knowledge of Avicenna appears to have been extremely superficial. When we state the fact, that, overlooking the corrections made by Galen, he went back to the Aristotelian liberality of giving three ventricles to the heart, we have sufficient evidence that his knowledge was purely theoretical.<sup>(2)</sup> His physiology of the eye was, however, more correct than that of any of his Arabian predecessors, as he places the seat of vision, not in the

(1) Avicenna terms the first *vis secretoria asbadal* ; the second, *adherentia adsilsac* ; the third, *assimilantia, altechbyh*. To the new matter furnished he gave the name of *cambium*.

(2) Lib. iii. fen. 2. tr. 1. c. 1.

crystalline lens, as had been supposed, but in the optic nerve.<sup>(1)</sup>

We do not intend following out the intricacies of his pathology; and shall content ourselves with remarking some of its more particular features.<sup>(2)</sup> He maintained that the functions of the brain were enfeebled by cold and moisture, and quickened by drought and heat. He distinguishes between inflammation of the head and phrenzy; but allows that they may be combined. He entertained strange ideas regarding the vital spirits, as well as the aërial substances, which were supposed to regulate sensations; believing that their alteration or disturbance was the cause of melancholy. In opposition to Galen, he maintained, and with truth, that plethora is the most frequent source of apoplexy.<sup>(3)</sup> He divided plenries into three varieties, the first arising from inflammation of the membranes; the second of the intercostal muscles; and the third of the mediastinum. His observations on simple or continued fever are characterized by considerable ingenuity. Galen had set it down as a mere alteration in the state of the sanguiferous and biliary systems; but Avicenna more properly regarded it as originating in an unhealthy alteration of the humours, and has described it as a kind of complicated intermittent.<sup>(4)</sup>

(1) Some farther particulars of the Anatomy of Avicenna may be found in Portal, (Histoire, tom. i. p. 349-150), and in Sprengel (tom. ii. p. 313-4.)

(2) Vide lib. iii. passim.

(3) Lib. iii. c. 12.

(4) He gave it the name of *Synocha Plethorica*, lib. iv. fen. 1. tr. 2. c. 43.

He has placed scarlatina between small-pox and measles; nor was purpura unknown to him, although he has only described a chronic species of it.<sup>(1)</sup>

Of the surgery of Avicenna little need be said. He has distinguished between closure of the pupil and cataract. In operating for the latter, he recommends depression; and speaks of extraction, which he had seen several times practised, as a very dangerous experiment.<sup>(2)</sup> Sprengel thinks, from a passage in his writings, that we owe to Avicenna the first use of the flexible catheter.<sup>(3)</sup>

In concluding our notice of Avicenna, we must again enter our protest against his being considered (though some writers have taken the liberty to do so), as little better than a mediocre or common place man. That his writings have produced an undue influence over the opinions of the world, is a thing that may or may not be correct; but it is an unequivocal proof of their power. No quack or mere pretender ever united the suffrages of five centuries in his favour. That he was a libertine was very probably the case; but that he was not habitually an idler is proved not only by the nature, but the magnitude of his literary undertakings. His is one of those characters of which too much good and too

(1) Le pourpre lui était connu, car il le désigne clairement sous le nom persan de *khawersyyeh*. Cependant il paraît n'en avoir observé que la variété chronique.—Sprengel, tom. ii. 317. *Khaweres* signifie *Millet* in Arabic.

(2) Lib. iii. fen. 3. tr. 4. c. 18.

(3) C'est lui probablement qui fit le premier usage du catheter flexible.—(Lib. ili. fen. 19. tr. 2. c. 9.)



much ill has been spoken,—truth lying between the opinions of the partizans. His genius was too fluent and wayward to be correct; but it is pity, where there are so many excellencies, that only errors should be chronicled.

## CHAPTER IV.

SERAPION THE YOUNGER, MESUE THE YOUNGER, AND  
ALBUCASIS.

BEFORE proceeding to give an account of Albucasis, the next conspicuous name in the history of Saracenic medicine, it is incumbent on us to mention several of less note, who were chiefly writers on the *Materia Medica*. Among these were Abdorrahman Mohammed Ebn-Ali, whose treatise on the properties and medicinal virtues of vegetables, animals, and gems, was translated into Latin by Ecchelensis;<sup>(1)</sup> and Ishak Ben-Soleiman, the author of an excellent treatise on dietetics.<sup>(2)</sup>

That Ishak-Ben-Soleiman preceded Serapion the Younger is evident from the circumstance of his being quoted by that author;<sup>(3)</sup> and Gedaljah fixes the time of his death in 940.<sup>(4)</sup>

In his book, Ishak adheres to the principles laid

(1) Habdarrhmanl Tract. triplex de propriet. ac virtut. medicis. animal. plantar. et gemmarum. 8vo. 1647.

(2) De Diætis. Univers. et Particul. Basl. 1570.

(3) De Simplic. c. 50. f. 130.

(4) Wolf. Bibliothec. Hebralc. vol. i. p. 665.

down by Aben Guesith regarding degrees, and has given a much more detailed and particular account of the various articles made use of for their nutritious qualities, than is to be found in any other of the Arabians.<sup>(1)</sup> Many of the suggestions which occurred to his mind are ingenious in the highest degree, and many of his inferences may be still found of practical value. His remarks on climate and clothing, for instance, are exceedingly sensible. It is to him that we owe the first account of the art of baking according to scientific principles. Perhaps he has descended to over-refinement in attempting to determine, according to their elementary qualities, not only the different kinds of viands, but even the different parts in the body of the same animal.

From the circumstance of both Aben Guesith and Ishak-Ben-Soleiman being quoted by Serapion the Younger, it is evident that he came at least a little after them, and may be placed probably about the end of the tenth century.<sup>(2)</sup>

The treatise of Serapion the Younger on the *Materia Medica* is one of the best which has come down to us from those times, and takes a complete and comprehensive view of every thing known to the Greeks and Arabians regarding the natural history and virtues of medicinal substances. To him we owe the mention of many things overlooked or omitted by his predecessors ; and he has improved upon

(1) *Isaaci fil Solomonis, Liber de Dietis, &c.* 8vo.

(2) *Sprengel, tom. ii. p. 323.*

them in his accounts of several articles, although it is scarcely necessary for us to now particularize these. It is not a little curious, that, in a mind fitted like his for accuracy of observation, we should find so great a love of the marvellous. He has given striking instances of this credulity in his descriptions of the growth of amber, of asphaltus, and bezoar.<sup>(1)</sup>

With Serapion has frequently been confounded another writer, who has been similarly distinguished from a predecessor of the same name, as Mesue the Younger, the son of Hamech.

According to Leo Africanus, Mesue the Younger was born on the banks of the Euphrates, was a Christian in religion, and died in 1028.<sup>(2)</sup> He enlisted under the medical banner of Avicenna, and retained throughout life the loftiest ideas of the merit of that extraordinary genius. He flourished at Cairo in the reign of the Caliph Albaken,<sup>(3)</sup> and rose into popularity and distinction from his acquirements. His writings have been often mistaken for, and confounded with, those of the Elder Mesue, of whom we have already given an account; but from Avicenna being quoted in his pages, we have sufficient proof that he was quite a different person.<sup>(4)</sup>

The works of Mesue the Younger attained a high

(1) De Simplic. c. 196, 177, 396.

(2) De Script. Philosoph. et Medic. Arab. p. 273.

(3) Asseminanni, vol. lii. p. 504.

(4) Mesuæ Opera, p. 194.

celebrity in his own age, and were used as textbooks not only in his own country, but in the Christian schools, where they continued to be read and commented on down to the middle of the sixteenth century.<sup>(1)</sup> Like Galen and Aben Guesith, Mesue would fondly have traced the peculiar virtues of medicines to their elementary or physical qualities ; as also to have determined these by their feeling or touch,—a task equally ingenious and futile ; and in some respects he may be said to have forestalled Linnæus in the conclusions to be drawn from the colour of plants.

His opinions on the effects produced by climate and situation on the medicinal virtues of vegetables, are full of the finest observation, and have received ample confirmation from the investigations of succeeding inquirers. He believed that bitter substances strengthen the stomach ; that acids diminish febrile heat ; and that, while the action of remedies is accelerated by saline liquids, they are soothed or moderated by mucilaginous ones. He made a distinction between laxatives and purgatives, and explained the principles on which the latter occasionally operated as emetics. He informs us that the vomiting qualities of bole armeniac may be overcome by sweetening it ; and that rhubarb, reduced to an impalpable powder, loses its aperient qualities. From the different modes of preparing extracts, recommended by Mesue, it is evident that the subject

(1) The latest edition, that of Marlinus, was printed in folio at Venice in 1562. Mesuæ Opera quæ extant omnia.

is one which had engaged a considerable share of his attention, and that he was better acquainted with it than any preceding author.

The practical part of his writings do not call for particular remark. He has given a variety of recipes, supposed to be adapted to the management of different diseases, but the mode of prescription is necessarily not a little empirical, as all medicines must be adapted to the particular exigencies of the case, when prescribed on scientific principles. To this general remark there are, however, some exceptions in his pages, especially in his theory and treatment of catarrh, which closely resemble those which Dr Mudge has adopted within the last fifty years.<sup>(1)</sup>

We have not many opportunities of judging to what extent Mesue was acquainted with anatomy; but that it was probably as imperfect as in the generality of the Arabian practitioners, may be inferred from several things in his works, more especially his recommendation of blisters to the spine in tic douloureux, from the belief that the facial nerves had their origin there.

Albucasis is principally celebrated as a surgical writer, if we separate between him and Alzaharavius; which, dissenting from the judgment of Dr Freind on the subject, we think there is every reason for. The work of the latter is little more than a mere extract from the Hawi of Rhazes, and what in it refers to surgery, is taken nearly as literally from Albucasis himself.<sup>(2)</sup>

(1) Mudge on Catarrh, Vis Vitæ, and Comp. Fractures, 12mo. Lond. 1782.

(2) *Libri Theorici nec non practici Alzaharavii.* Fol. 1519.

There has been some dispute as to the exact time when Albucasis appeared ; but, although the learned historian of Arabian medicine, from some circumstantial arguments, attempts to shew that this must have been at a date somewhat posterior to what is generally supposed,<sup>(1)</sup> Casiri has proved, from incontestable evidence, that, at all events, he died in 1122. He was a Spanish Moor, and was born at Zahera, in the neighbourhood of Cordova. Of his private history,—save that he was generally beloved and respected, and of a disinterested and liberal spirit, holding the love of gain as beneath the dignity of a high minded practitioner,—no particulars have been rescued from oblivion.

Avenzoar and Albucasis bear concurrent testimony to the deplorable state into which surgery had fallen in their days ; and which they have imputed, with every shew of reason, to the wretched ignorance of the Spanish practitioners, in whatever related to anatomy. The latter informs us, that they dashed into all kinds of operations, without in the least knowing the nature of the parts they were dividing, and consequently without attending to the precautions necessary for averting danger.<sup>(2)</sup>

(1) Hist., vol. ii. “ I don't find any certainty of this author's age ; but he is generally, though for what reason I do not apprehend, supposed to have lived about the year 1085 ; but there is some ground to think he was not so ancient : For, in treating of wounds, he describes the arrows of the *Turks*, a nation which scarce made any figure till the middle of the twelfth century,” p. 127.

Sprengel, in remarking on the extraordinary historical inaccuracy of this passage, uses language somewhat more bitter than the occasion requires. Freind only speaks of the *Turks* “ as scarce making any figure ;” whereas the Professor would almost appear to convey, that he had represented them as not previously existing at all, which is somewhat disingenuous, and not the case.

(2) Lib. ii. c. 94. “ Surgery, in his time, was extinct, so that scarce any footstep of the art remained.” Freind, History, vol. ii. p. 129.



The surgery of Albucasis is divided into three books ; the first treating of caustics ; the second of surgical diseases ; and the third of luxations, together with some particulars omitted in the two foregoing.

The application of cauteries and caustics was one of the most prominent characteristics of the practice of Albucasis. Fire seems to be the element in which his medical spirit “ lived, moved, and had its being ;” and, as Dr Freind remarks, “ he appears to be in a rapture when speaking of its divine and secret virtue.”<sup>(1)</sup> He regarded the actual cautery especially, as a remedy of wonderful power ; and describes more than fifty affections in which he himself could bear personal testimony to the marked benefits derived from it. From the pages of this author, we see how much more familiar the use of the cautery was in his day, than even with the Greeks. He gives some excellent directions for the different methods and forms of applying it, and cautions against its use save by persons acquainted with the anatomy of the frame, and the position of the nerves, tendons, veins, and arteries.<sup>(2)</sup>

Albucasis employed four different methods of checking hemorrhage from wounded arteries—cauterization, complete division, ligature, and styptics. The third is distinctly stated in his pages, although the merit of the discovery has been claimed most

(1) Hist. vol. ii. p. 131.

(2) Lib. i. c. 49.

unjustly for Ambrose Paré; who, we believe, however, was the first who recommended the employment of a needle in attaining that end.<sup>(1)</sup> He has described a particular instrument of his own for operating in fistula lachrymalis, and the needle used by the surgeons of Irak for cataract. He looked upon bronchotomy, or, more properly, trachæotomy, as quite a useless operation when the angina extends down the windpipe. In operating for the stone, his method made a near approach to that recommended and practised by Paulus Ægineta. After the same author he has described plans for opening the amygdalæ when suppurating, or removing them when diseased;—the latter of which is certainly a very questionable experiment. He also points out the manner of removing the uvula when imposthomed, or so lax as to resist astringent topical applications.<sup>(2)</sup> Bold as was the surgical practice of Albucasis, he dissuades from using the knife in cancers, if extensive, however recent they may be; assuring the reader that he never either cured one, or saw one cured.

His remarks on abscesses, and their surgical treat-

(1) In lib. i. c. 57, Albucasis has the express words—"arteria ligetur cum filo ligatione forti."

Portal is also of opinion (Histoire, t. i. p. 160), that to Albucasis we owe the remark, that it is by the formation of a clot (caillot) in the orifice of the artery that the cessation of the hemorrhage is effected. The passage of Albucasis, to which he alludes, is this—"Arcte quamprimum digitis suis comprimat arteriæ orificium, et constringat eam valde donec obsessus est sanguis, et digitus non removeatur, effundatque celeriter aquam maxime frigidam, donec congelatur et ingrassetur sanguis."—Lib. i. c. 57.

Petit, in more modern times, has described the process of nature more circumstantially.

(2) Lib. i. c. 57.

ment, are extremely observant, discriminative, and judicious. He says that they should be considered according to their nature and situation; that some required being opened, without attending to their maturation, especially those in the neighbourhood of joints, where there is risk of the ligaments becoming affected—and that, when very large, the contents should be evacuated only by degrees. To Albucasis we owe the invention of the probang—an elastic rod, tipped with sponge, for dislodging extraneous substances from the gullet. In wounds of the intestines he several times had recourse to gastroraphe, with success.

In his surgery we find a great deal of practical information regarding the obstetric art, which he represents as having found in a deplorable state. He was acquainted with the art of turning in unnatural presentations; and has described a case of extra-uterine gestation, where bones were discharged by an abscess at the umbilicus.<sup>(1)</sup> From no similar case having been previously recorded, the medical world long remained sceptical as to the accuracy of this statement; but subsequent instances, undoubtedly authenticated, have put the matter beyond the reach of cavil.<sup>(2)</sup> When the infant was dead, or hy-

(1) De Chirurg. lib. ii. c. 76.

(2) *Vide* on this subject Dr Garthshore, Lond. Med. Journ. vol. viii. p. 344. Among the more interesting cases are those of Mr Bell (Med. Comm. vol. ii. p. 72); of M. La Croix (La Med. Eclairée, tome iv. p. 340); Mr Mainwaring's (Trans. of a Society, &c. vol. ii. p. 287); and those by Dr Fern and Mr Jacob (in Lond. Med. Jour. vol. viii. p. 147).

drocephalons, he appears to have had recourse to the crotchet, without much hesitation or ceremony.

Albucasis is the only one among the ancient writers on surgery who has described the instruments used in each particular operation; and even in the Arabic manuscripts figures were given of them. Douglas has ascribed several of these drawings to himself;<sup>(1)</sup> but Portal has well shewn that this is probably a mistake.<sup>(2)</sup>

Not the least curious and interesting among these is the description of the particular instruments used by the old surgeons in bleeding. Galen, in his commentaries on Hippocrates, tries to give a notion of the instrument recommended by the former in tapping for empyema,<sup>(3)</sup> by saying that it nearly resembled that commonly used in bleeding.<sup>(4)</sup> He also mentions the myrtle-knife, so named from its resemblance in shape to the leaf of that plant; and the double-edged knife, which probably was somewhat like our small catline. Celsus terms the instrument used for opening a vein *Scalpellus*; but by Constantine, and all the lower Latin writers, it is called *Phlebotomus*. The word *Lancet* was borrowed by the French from the ancient Gauls, and by us from the French.<sup>(5)</sup> Guido de Couliaco says, that knife

(1) Bibliograph. Anatomic.

(2) Histoire de l'Anatomie, tome i. p. 165.

(3) The μαχαιραν οξυβελεις.

(4) The φλεβοτομον.

(5) "*Lanceola*, in its proper and genuine signification," says Freund, "is no older than Julius Capitolinus; how long it has been applied to signify a chyrurgical instrument I cannot tell. However, it may be traced to William

which Albucasis used in the section of a vein, as distinguished from puncture, and calls *Alnessil*, was nothing else but our common lancet.<sup>(1)</sup> The myrtle and olive leaf knives, the last of which was narrower, and had a sharper point, were used for bloodletting by puncture. For opening veins in the forehead, use was made of an instrument termed the *Fossorium*, which is said to have resembled the phlem, now used by farriers for bleeding cattle, and which required percussion to make it penetrate into the vein.<sup>(2)</sup>

of Bretagne, who lived in 1220, and wrote the History of Philip August, whose chaplain he was. He gives us some account of the *Lanceola*, and distinguishes it very plainly from the *Phlebotomus*, both which instruments we see made use of in that age. *Lanceola dicitur subtile ferrum acutum, cum quo minutores aliqui pungendo venam aperiunt in minutione. Aliqui cum Phlebotomo venam percutiant, unde et Phlebotomia dicitur minutio.*—History, vol. ii. p. 177-8.

(1) *De Chirurg. lib. ii. c. 95.*

(2) Constantine the African, who lived anterior to Albucasis, seems to refer to this instrument in the following words—“*ferire, venis feriendis, ne nervus percutiatur, ne os percutias.*” The expression of Juvenal seems also to allude to the same instrument—“*mediam pertundite venam.*” See Freind’s History for some other curious remarks relating to this subject, vol. ii. p. 174-8.

## CHAPTER IV.

AVENZOAR—AVERRHOES—AND EXTINCTION OF THE  
ARABIAN SCHOOL.

WE now approach the termination of our present design, and must conclude our account of Arabian physic, by noticing Avenzoar and Averrhoes, the honoured master and illustrious pupil.

Avenzoar justly holds a distinguished place among the Saracenic physicians, from the extent of his medical observations, and from the ingenious and original modes of practice which they suggested to him. Of his biography nothing farther is known than his long practice at Seville, the capital of Andalusia, and residence of the Mahometan Caliph;<sup>(1)</sup> that he was once barbarously treated and imprisoned by Haly, the king's constable; that under his father and grandfather, who were both physicians, he commenced the study of medicine at the early age of ten; and that he prosecuted it during a life extended far beyond the ordinary term of duration, having seen the sun shine through the summers of 136 years.<sup>(2)</sup> By Averrhoes he was held in the highest

(1) In his preface, Averzoar says, "Conservat Deus honorem et nobilitatem domini mei Miramamolini." Sprengel supposes this magniloquent word to be a mere corruption of Emir Elnoumenyon, the prince of the faithful.

(2) Castel. In *Vitis Medicor. Illustr.*—Tiraquellus, in *Nomenclat. Med.*

estimation. He bestows upon him epithets of the most extravagant praise; acknowledges him for his master; and, in various parts of his writings, styles him the admirable, the glorious, the treasury of all medical knowledge, the supreme of physicians since the days of Galen.

Before proceeding to the notice of his work, entitled *Thaïsser*, which contains rules for the medical and dietetical management of each distemper, it is worthy of remark that the elder Arabian or Asiatic physicians seem quite unknown to him. He makes no reference to their theories or practice,—a circumstance only to be accounted for from the cessation of intercourse between the Spanish and Asiatic Moors, which took place from a family schism, when Abdalraman, the son of Moavie, fled into Spain, after the destruction of his house by the Abbasidæ, so early as the second century of the Hegira; and founded the monarchy of the west, making Cordova his capital. The hatred thus engendered between the eastern and the western Arabians continued so bitter, that a total cessation of intercourse took place between the two countries. The writings of the latter nation seem never to have found their way into Arabia at all; while those of the former were little, if at all, known in Europe, till the time of Averrhoes.

The taunt of empiricism which has been thrown out against Avenzoar, is completely unfounded and unjust; as, in truth, there is not perhaps one of the Arabian writers to whom it is so utterly inapplicable. Although, in his preface, he gives some re-



ceipts approved of by himself and others, as efficacious in sundry complaints, he expressly says, that the only sure guides of practice are observation and experience ;<sup>(1)</sup> and that, by these alone, can a physician recommend his practice either to his own conscience or the world. As a farther proof of his contempt for all quackery, he discards astrology from physic ; acknowledges Galen, from his repeated references to his writings, as the highest medical authority ; and reasons, throughout all his descriptions of diseases, on the management that seems necessary for their cure, according to the idea he has formed of their causes and symptoms.

Among the peculiarities in the work of Avenzoar, which, as a whole, follows too much in the wake of the great medical pilot of Pergamus, we find accounts of inflammation and abscess in the mediastinum and also in the pericardium,—diseases not mentioned, so far as I am aware of, by any preceding author. He was himself the subject of the former, and cured himself by extensive bloodletting.<sup>(2)</sup> Of the latter, cases were afterwards recorded by Rondeletius<sup>(3)</sup> and Hildanus.<sup>(4)</sup> Of dropsy in the pericardium, a disease not mentioned by Galen, Avenzoar informs us that cases had been met with ; although none by himself. He describes a case of abscess in the kidney, from which fourteen pints of pus were evacuated ; and is naturally startled at the

(1) Thaisser. c. 89.

(2) Thaisser. c. 65.

(3) Rondelet, c. 10.

(4) Centur. lib. i. c. 43.

fact of the capsule or exterior membrane of that organ being capable of such extraordinary distension.<sup>(1)</sup>

His observations on stricture and relaxation of the gullet are new and interesting. He proposes three modes of treatment, according to the circumstances of the case; first, the occasionally passing down a tin or silver tube; secondly, the use of a milk-bath, that nutritious particles may be taken up by the pores in the skin; and, thirdly, nourishing clysters. His method of reasoning on the last is curious; and, when we consider his necessarily imperfect knowledge of the absorbent system, full of ingenuity. It may be observed, however, that this practice did not originate with him; Oribasius having devoted a short chapter to the consideration of the same subject.<sup>(2)</sup>

It is worthy of remark that Avenzoar recommended goats milk in cases of pulmonary consumption, as the best substitute for asses milk, which is strongly recommended by Galen in that disease. The latter, not being considered as a proper prescription in a Mahometan country, from being prohibited by the Koran.<sup>(3)</sup>

(1) Freind very pertinently remarks, in reference to this subject:—"The same appearance we find in so minute a part of the human body as the ovary naturally is, when it is affected with a dropsy; in which case the membrane not only enlarges itself to a vast *cystis*, but, like the uterus in p reguation, grows thicker in its coats as it increases in the largeness of its dimensions."—History, vol. ii. p. 91.

(2) Collect. 8. c. 34.

(3) Thaisser, lib. ii. c. 2. From D'Herbelot. (Biblioth. Oriental), we learn that, with some Mahometan tribes, the ass was held in great esteem, but that the more rigid adherents of the law held it in abomination. The philosopher Marissi was the first interpreter of it who permitted the eating of asses flesh, and he was supported in his new doctrine by his disciple Bokhari. The Mufti

Avenzoar applied himself with considerable zeal to pharmacy ; and we find, in his treatise, accounts of both simple and compound medicines not elsewhere to be met with. The finding out of antidotes for poisonous plants seems to have been a favourite research with him ; and we observe him affirming, that the flowers of Nenuphar correct the malignity of black hellebore ; that mastich mollifies the drastic qualities of scammony ; and that sweet almonds, in like manner, operate in moderating the violence of coloquintida. In the case of a jaundice, which he supposed to be caused by poison, he prescribed Bezoar stone ; and Freind says that it is perhaps the earliest instance of its being used for its medicinal properties.<sup>(1)</sup>

We do not find much of surgery in the pages of thought even the milk of cows and sheep forbidden.—Vide the articles *Marissi* and *Bokhari*.

(1) His account of the Bezoar stone is so curious, and contains such a mixture of fact and fiction, that we must quote it. “ That is the best which is found in the east, near the eyes of stags. Great stags, in those countries, eat serpents to make them strong ; and, before they have received any hurt from them, run to the streams of water, and go into it so far till it comes up to their heads ; this custom they have from natural instinct ; and there they continue without tasting the water (for, if they should drink it they would die immediately), till their eyes begin to trickle : this liquor, which there oozes out under the eyelids, thickens and coagulates ; and continues running, till it increases to the bigness of a chestnut or a nut. When these stags find the force of the poison spent, they come out of the water, and return to their usual haunts : and this substance, by degrees growing as hard as a stone, at last, by their frequent rubbing it, falls off. This is the most useful Bezoar of all.”

Dr Freind, alluding to the authorities of D'Herbelot, remarks, that “ this account given by Avenzoar, is confirmed by other Arabian writers who have travelled into Persia and China, where it most abounds. The author of the book concerning simples, ascribed to Serapion, erroneously supposes that it grows in some mines : and, to shew the exorbitant value of it, he quotes Abdalanarack as a voucher, that a palace of Corduba had been given for one of these stones.”—Hist. vol.ii. 108.

Avenzoar. The Mahometan law was a barrier against the acquirement of anatomical knowledge not to be got the better of. He mentions, however, several cases, as rupture, fracture of the hip-bone, wounds of the arteries and veins,<sup>(1)</sup> tumours, and other varieties of surgical disease, which he appears to have understood well, and treated with discretion.

The brightest name in the history of Arabian philosophy, and not the least renowned in its medical annals, is that of Abual-Walid-Mohammed-Ebn-Achmet-Ebn-Mohammed-Ebn-Roshd, commonly styled Averrhoes.<sup>(2)</sup> He was of a noble and distinguished family, and was born at Cordova, in Spain, about the middle of the twelfth century. He early commenced the study of philosophy under Thophail, the celebrated author of the metaphysical tale *Hai Ebn Yochdan*;<sup>(3)</sup> and probably it was from him that he imbibed no inconsiderable portion of his enthusiasm, and boundless admiration for the doctrines of Aristotle. Avenzoar was his principal preceptor in medical science.

By universal acclamation, Averrhoes succeeded, on the death of his father, to be chief magistrate of Cordova, with jurisdiction not only over the civil,

(1) Thaïsser, 56, 57. 65.

(2) He was born in 1149. (Petr. Apon. Dissert. ix.)

(3) This elegant tale, which is still extant, contains the story of a youth who had been exposed when an infant on the sea-beach, was found and nourished by a hind, and grew up in solitude among the woods; and who, by the unassisted exercise of his powers, came to a knowledge of things natural and supernatural, and arrived at the felicity of an intuitive intercourse with the Divine mind. A translation of this story was published in English by Professor Ockley of Cambridge. Lond. 1711. Thophail died about the close of the twelfth century. *Leo African.* c. 17.

but the ecclesiastical authorities of the province; and so high did the tide of his reputation float him. that, in addition to these honours, he was appointed chief magistrate and priest of Morocco and Mauritania by the Caliph Jacob Almanzor. After residing some time in these countries, modifying their laws, amending their institutions, and appointing judges and public officers for their better government, he returned home loaded with caresses and benedictions, and resumed his former offices.<sup>(1)</sup>

So far all was sunshine in the life of Averrhoes, but it was destined to be bedimmed with shadows proportionately deep. It was scarcely in poor weak human nature to behold such almost unexampled prosperity without envy. Hatred and jealousy set about searching out the surest means of accomplishing his destruction; and, knowing how opposed was the Mahomedan code to the investigations of philosophy, thus founded an accusation not to be gainsayed. Averrhoes had applied the whole vigour of his masculine understanding to commenting on the philosophy of Aristotle, and so successfully, that he was not only by common consent styled *The Commentator*, but was reckoned by many a superior even to the Grecian himself. It was here that his enemies had hold of him; he was said to have broached heterodox doctrines, and to have deserted the Mahometan faith. The charges were signed by a hundred witnesses, who deposed having heard heresies from his own lips; and the Caliph, afraid to oppose

(1) *Leo African. de Vir. Arab.* p. 280.

popular clamour, especially on such a dreaded and obnoxious subject, confiscated his property, and banished him from within the walls of Cordova, to reside among the Jews and other outcasts in the suburbs.

So strong against Averrhoes had fanatical indignation at this time arisen, that his pupil Maimonides, afraid to be in the least degree associated with him or his cause, left Cordova; and the boys used to watch the opportunity of his going up to the mosque in the city, at the hour of prayers, to pelt him with mud and stones. From these scenes of misfortune, ignominy, and degradation, he at length effected his escape to Fez, where, scarcely had he arrived, when he was discovered, and shut up in prison. A council was called by the king, to settle the issue of his fate; but its members differed in their opinions as to his sentence. Some were for putting him to instant death; while others insisted on protracting his life, merely that he might be made to suffer the humiliation of making a public recantation of his errors. The latter prevailed, and it was determined on, that he should be led out bareheaded, at the hour of prayer, and placed on the upper step at the entrance of the mosque, that every one, as he passed in, might have an opportunity of shewing his holy wrath and indignation by spitting in the heretic's face. The ignominy was patiently and uncomplainingly submitted to; and, when service was ended, the judge, attended by the officers of his court, came forward to hear him make a public confession of his



heresies. Averrhoes was then permitted to leave the country, and return to Cordova, where he arrived in privacy, and remained in rags and wretchedness.

He had been allowed to continue there for a considerable time in scorn, poverty, and neglect, surrounded by the dregs of society, when a sudden revolution once more took place in his fortune. The misgovernment, and consequent unpopularity of the person who had succeeded him in the regency of Morocco, caused the people to petition the king for their former ruler, under whose mild, wise, and paternal government, they had enjoyed so much prosperity, and experienced so many blessings. The Ruler of the Faithful was doubtful about taking such an important step, without first summoning an assembly of the priests; and their deliberations fortunately terminated in favour of Averrhoes, who was restored to freedom; and thus, by another singular revolution of fortune, raised once more from "the slough of despond," to be re-instated in his former honours. Returning to Morocco, he lived yet a little while, to set mankind a pattern of every moral virtue. In adversity, he had shewn an equanimity which nothing could baffle; and, in prosperity, he bore testimony to the world, that all the dispositions of his heart were amiable. Although tempted by the luxurious cates of a palace, he practised the most rigid temperance, drank water, and ate but once a-day of the plainest food. All his leisure hours were dedicated to scientific pursuits; and, shunning the



idleness and profligacy of courts, he passed his midnight hours in solitary study. But although nothing could exceed the moderation of his personal expenses, his munificence and liberality were unbounded; especially when called forth for the advancement of science and literature. As a magistrate his justice was as conspicuous in the arbitration of disputes, as his humanity in the condemnation of malefactors. The love, the praise, the admiration, and gratitude of the people over whom he ruled, were an ample compensation for the mean and unmerited humiliations of former years. Happiness gilded the evening of his days, and his sun went down unclouded. According to the best authorities, Averrhoes died in 1206.<sup>(1)</sup>

With the philosophy of Averrhoes it is not our present purpose to deal, farther than as it is connected with his medical theories; but although his almost blind veneration for the doctrines of Aristotle unquestionably led him into a support of some tenets of a tendency fearfully sceptical, we should hold in remembrance, that his opinions are only known to us through the medium of translations, imperfect in the utmost degree, and perhaps as unfaithful and unfair to their author, as those of Avicenna are known to be. Another apology of quite a different kind may be found for Averrhoes, in the circumstance, that, although such an enthusiastic admirer

(1) *Vide* Bayle, Diction. vol. i. p. 382, artic. Averrhoes. Leo African. p. 284. Bartolocci. vol. i. p. 12. Casiri, vol. i. p. 185. Enfield's History of Philosophy, vol. ii. 226. Sprengel, Histoire, vol. ii. 338.

of Aristotle, he was unacquainted with his writings in the original Greek, and only studied them—as others have done his own—through the medium of imperfect versions, and with the dangerous commentaries of Ammonius, Themutius, and others.<sup>(1)</sup> Rāpin, in his *Reflections on Philosophy*, accuses Averrhœs with having misunderstood or misinterpreted the metaphysics of the Stagyrte;<sup>(2)</sup> a circumstance not to be disputed, although it would be unfair to trace it to any other cause than this channel of acquaintance; the Arabic versions being vague and incorrect, and the commentaries the speculations of men attached to the doctrines of modern Platonism.

As far as regards medicine, it is evident, that, if he loved Galen much, he loved Aristotle more; and, wherever their doctrines are discordant, he shews cause why we should adhere to the latter. At first, like him, he regarded the heart as the centre of the vascular system, and the source of sensations; but latterly he came, like Plato, to divide these functions between the heart, the liver, and the brain, making the first the origin of the arteries; the second the source of the veins, and the nutrition conveyed through them; and the last the seat of sensation.<sup>(1)</sup>

His principal work, entitled *Kouillyath*, or the *Colliget*, and dedicated to Abdelech, the Miramamo-

(1) Sprengel, *Histoire*, tom. ii. 337. Lud. Vives de Caus. Corrupt. Art. lib. v. p. 167.

(2) V. xv. p. 340.

(1) Averrhœs, de *Concordia inter Aristot. et Galen*, Ed. Surian.

lin of Morocco, proceeds on the idea of combining the dialectics of Greece with medical science; and he sets out by warning his readers, that they may not be able to follow him in his reasonings, or appreciate their truth, without an acquaintance with logic.<sup>(1)</sup> Indeed it is evident that Averrhoes attended to medicine, merely as a favourite branch of general study, and that his mind was often destined to occupations widely different from the calm pursuits of the physician. His *Colliget* contains a digest of the whole science of medicine, and is divided into seven books. We would look in vain, however, through its pages for any thing new regarding practice; but although we are prepared to find much more of the philosopher than the physician, to Averrhoes must be conceded the merit of luminous and systematic arrangement,—a rare quality in medical writings. His pathology differed little from that of Avicenna, as he explained the symptoms of each particular disease according to the inherent forces of the parts affected.<sup>(2)</sup> He endeavoured to bring into disrepute the doctrine of the degrees of medicine, which, introduced by Alkhendi, had maintained its popularity and ascendancy over every other theory, with almost all his medical successors, as we have already had occasion to remark; and very pertinently asks, on what grounds were geometrical proportions admitted in preference to arith-

(1) *Collegit*, p. 1.

(2) *Colliget*, lib. iv.

metical ones? <sup>(1)</sup> He has given some admirable remarks on the application of general principles to particular cases, and reminds the physician, that not only are therapeutic laws modified by age, climate, and constitution, but that experience and judgment should always be allowed to supersede these, when they apparently stand in opposition.<sup>(2)</sup> Averrhoes is the first author who says that small-pox is a disease to which the human constitution is only once subject.<sup>(3)</sup>

According to Casiri, the Arabians can boast of a botanical writer of high eminence in Ebn-Baithar, who was born at Malaga, made several voyages for scientific purposes to Greece and the East, received the title of Master from the Academy of Grand Cairo, and was raised to the rank of Visier by the Caliph Malek-Alkamel; but as the original is still confined to the manuscript depositaries of great libraries, we have no means of judging but by his account.<sup>(4)</sup> It is said to take a comprehensive view of medical simples, especially plants; and to contain not only every thing worthy preservation which could be gleaned from his predecessors, but critical remarks on Dioscorides, and a variety of observations proper to himself. Ebn-Baithar died in 1248.<sup>(5)</sup>

(1) Colliget, lib. v. c. 58.

(2) Colliget, lib. vi. c. 1.

(3) Freind's History, vol. ii. p. 117.

(4) Casiri has himself translated the preface, which is highly spoken of.—*Vide* Sprengel, tome ii. p. 341.

(5) Abulfeda apud Casiri, vol. i. p. 276.

Soon after this, the arts and sciences declined among the Saracens both of the eastern and western kingdoms; and their overthrow was completed by the triumph of the Turkish power—the destruction of the Caliphates—and the substitution of a government altogether intolerant and despotic. The last traces of intellectual illumination showed themselves among the Spanish Moors, in the 13th century; when the Christian arms, becoming more and more powerful, they were compelled to substitute the field for the study—the sword for the pen—and, before an overwhelming opposition, were at length driven from a region whose fields they had tilled, and whose olives they had gathered for a thousand years.

In concluding our notice of the Arabian physie, we may be allowed to remark, that, although in most things relating to the Healing Art they were almost servile copyists of the Greeks, we are indebted to them for several improvements, alike in the theory and practice of medicine. They divided physie, pharmacy, and surgery, into three distinct professions; and thus, by forestalling Dr Adam Smith on the division of labour, they gave greater chance and fuller scope for the ultimate advancement of these different arts. To them we owe the introduction of chemical remedies, and the first description of several diseases,—more especially small-pox, measles, and spina ventosa. To Botany and Materia Medica they made some extensive additions, particularly to the catalogue of aromatics and purgatives; and they pointed out, in several of the latter class, some va-

luable properties which had hitherto escaped notice. In Rhazes we find the first treatise dedicated to the consideration of diseases incident to children ; while the pages of Albucasis teem with observations which have tended not a little to the advancement of surgery.

In another point of view, medicine is incalculably indebted to the Saracens, for their preservation of the Greek writers ; as it was only after the return of the French, Italian, and English, from the Crusades, that these came to be known in Europe, through translations from the Arabic. Of the originals only a few isolated copies lay in worm-eaten disuse within the walls of the monasteries ; and probably, but for the interest thus rekindled towards them, might, in the course of a few onward years, have been entirely and for ever lost to the world.

✓ With the decline of the Saracenic school, the daylight of science went down over the nations ; and an intellectual darkness, which endured for three hundred years, enveloped the general face of society. All the fountains of science were dried up ; and the world seemed retrograding into the unilluminated chaos of ignorance. ✓ To show how and where a new day-spring visited the nations, must be reserved as a theme for future illustration.

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